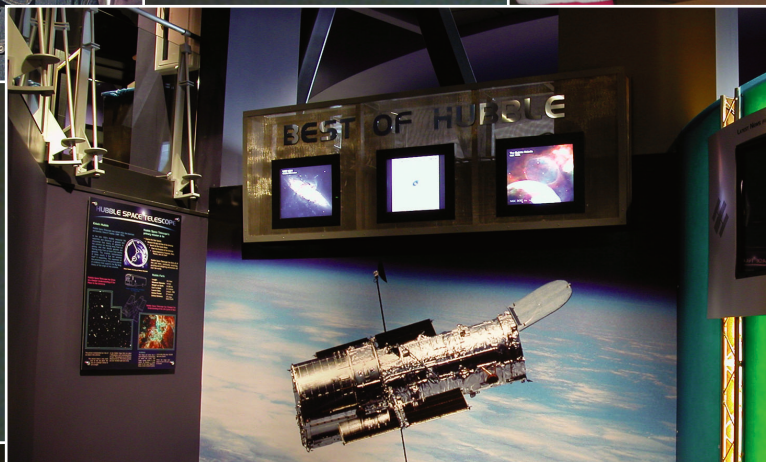


National Aeronautics and Space Administration

Space Science

Education and Public Outreach



Inspiring the Next Generation of Explorers

ON THE COVER: The beautiful aurora borealis “paints” the night sky over Alaska and served as the inspirational theme for Sun-Earth Day 2003 - one of thousands of events held across the country through which the Space Science E/PO program brought inspiration to “the next generation of space explorers”. These events included opportunities for personal engagement as represented by solar observing by students at Southern University (top left), participation in educator workshops such as this one for Girl Scout leaders (top right), experiencing planetarium shows and multimedia presentations such as provided by the award winning ViewSpace program (center), and engagement in major traveling museum exhibits such as “Cosmic Questions” (bottom left and bottom right).

Photo Credits: (Background) Jan Curtis; (from top left to right) Southern University/G. Stacy, NASA Jet Propulsion Laboratory, Clark Planetarium, Smithsonian Astrophysical Observatory, National Geographic Society/M. Thiessen.

National Aeronautics and
Space Administration



Headquarters
Washington, DC 20546-0001

June 2, 2004

Reply to Attn of: **S**

Dear Colleague:

It is a pleasure to present the NASA Space Science Education and Public Outreach (E/PO) Annual Report for Federal fiscal year (FY) 2003.

Contained in these pages are summaries of the contributions of more than 115 space science missions and research programs; 1,300 space scientists, technologists, and support personnel; and 500 external partner institutions and organizations to space science E/PO. Collectively, these individuals and organizations conducted more than 5,000 discrete E/PO events, hosted by more than 2,400 different institutions across the United States and its territories and possessions in FY 2003.

These space science E/PO activities comprise one of the largest single programs in astronomy and space science education ever undertaken, yet they are only one component of NASA's overarching education program. The program structure, policies, and plans described within this report are a direct response to intensive studies conducted by the Space Science Advisory Committee's E/PO Task Force and by the Lesley University Program Evaluation and Research Group, both of which have spent countless hours evaluating our efforts and providing the critical feedback necessary to make our program a success. The cohesiveness that holds this remarkable collection of activities together is provided by the NASA Space Science E/PO Support Network, composed of four Educational Forums and seven regional E/PO Broker/Facilitators, who are the often-unseen backbone that makes possible the E/PO efforts reported here.

On behalf of everyone involved in the NASA Space Science E/PO Program, I invite you to browse through the descriptions of these FY 2003 E/PO efforts and join us in continuing to make our space science E/PO efforts even more vibrant and successful in FY 2004.

If you have any questions or comments, or if you wish to receive additional copies of this report, please contact Dr. Larry Cooper at Larry.P.Cooper@nasa.gov or 202-358-1531. Searchable and downloadable versions of this Annual Report are available online at the NASA Space Science Enterprise E/PO Web site: <http://space-science.nasa.gov/education>, under the link to "Annual Report."

Sincerely,

A handwritten signature in black ink that reads "Philip J. Sakimoto". The signature is written in a cursive, flowing style.

Philip J. Sakimoto
Acting Director
Space Science Education and Public Outreach Program

*“The most important result of
NASA’s Space Science program
is the sense of wonder and imagination
it inspires in America’s youth.”*

— Edward J. Weiler,
NASA Associate Administrator for Space Science

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FOREWORD

In December 2002, the NASA Education Enterprise was established to provide students and educators with unique teaching and learning experiences "as only NASA can." Working collaboratively with NASA's Science and Technology Enterprises, the Education Enterprise promotes education as an integral component of every major NASA mission.



NASA's Space Science Enterprise has been a pioneer in making education a fundamental part of each of its missions and research programs. This Annual Report provides vivid evidence of the power of such an approach. The education activities and products described in this report are the result of the commitment to build education into every space science

mission and research program conducted during FY 2003, with more than a thousand members of the NASA space science community devoting their time and expertise to education efforts.

The interplay between education and the science missions is mutually beneficial. The excitement of conducting missions and making new discoveries inspires future generations of explorers to pursue careers in science and technology. It is our desire that these future explorers will become part of the workforce who will carry out future missions.

As we enter the second century of flight, with the excitement of missions to the Moon, Mars, and beyond on the

horizon, the necessity of preparing the pathway for the next generation of explorers becomes critically important. To maintain and improve the quality of our future workforce, we must draw from the largest talent pool possible, and this talent pool must be inclusive of the full diversity that our Nation has to offer. In this regard, the Space Science Enterprise has shown tremendous dedication and innovation. Within this report, you will find descriptions of a number of special initiatives designed specifically to encourage participation in space science by minority universities, underrepresented populations, and students with disabilities.

The Space Science Enterprise education program is a prime example of how NASA leverages its unique missions and research programs to inspire the next generation of explorers.

Adena Williams Loston
Associate Administrator for Education

A handwritten signature in black ink that reads "Adena Williams Loston". The signature is fluid and cursive, with the first name being the most prominent.

PREFACE

Since 1997, the Space Science Enterprise has made education and public outreach (E/PO) an integral part of every new mission and every research program. No space science mission is complete until its results and discoveries are returned to the American public through extensive E/PO efforts led by the mission personnel themselves.



Our commitment to education places a special emphasis on precollege education, diversity, and increasing the general public's understanding and appreciation of science, technology, engineering, and mathematics. This emphasis complements our traditional role in higher education, where we will continue to support profes-

sional education by facilitating research, which is a central element of meeting our responsibility to help create the scientific workforce of the future.

Our approach to E/PO is based on a radical set of recommendations that emerged from a Space Science Advisory Committee Task Force chartered to develop a new approach for the Space Science Enterprise to use in carrying out its E/PO programs. Rather than attempting to put a thin veneer of education on top of business as usual, we concentrated on getting our missions, research programs, and scientists to develop and operate their own E/PO projects in highly leveraged partnerships with professional educators. Seven years later, the results—as summarized in this Annual Report—are impressive. We now have more than 5,000 E/PO events annually, an online directory of hundreds of space science educational resources, traveling museum exhibitions and planetarium shows appearing in venues

across the country, and a presence in every State. The Space Science Enterprise's original initiative to strengthen its education focus has become a major national program in a very short period of time.

We are very pleased to be making this contribution to NASA's overall education program. Since the establishment of NASA's Education Enterprise last year, we have found numerous opportunities to contribute our resources to major Agencywide education efforts. In the coming years, we expect such collaborations to increase, even as we continue to address a number of critical issues within our own Enterprise's E/PO programs. These issues include the need to build more coherence into our wealth of educational products, the need to provide professional development opportunities for those who guide and operate our E/PO projects, and the need to greatly expand our already substantial efforts to improve the diversity of participants in NASA space science activities. Addressing these needs and coordinating our E/PO efforts with those of the NASA Office of Education will be our agenda for FY 2004 and beyond.

A handwritten signature in black ink that reads "Edward J. Weiler". The script is fluid and cursive.

Edward J. Weiler

Associate Administrator for Space Science

EXECUTIVE SUMMARY

In Federal fiscal year (FY) 2003, NASA's Space Science Education and Public Outreach (E/PO) program was characterized by continued rapid growth, attention to establishing processes for addressing the critical areas of coherence in space science educational materials, professional development for specialists in space science E/PO, diversity in space science education and research programs, and increased collaborations with other parts of NASA's overall education program.

More than 5,000 discrete E/PO events sponsored by the NASA Space Science Enterprise took place in FY 2003—a more than 40 percent increase over the number of events reported as having taken place in FY 2002. These events took place in all 50 states, the District of Columbia, and Puerto Rico. They included exhibitions and planetarium shows at science centers and museums across the country, teacher workshops, activities involving students directly in the research and discovery of NASA space science missions, and a wide variety of public outreach events. In addition, 55 new space science educational materials or resources were developed during the year.

Essential to carrying out this vast portfolio of E/PO activities was the direct participation of more than 1,300 Space Science Enterprise-affiliated scientists, technologists, and support staff, affiliated with 115 different NASA space science missions and programs. More than 500 institutional and organizational partners contributed to leading the E/PO efforts for NASA space science missions or programs or to developing NASA-sponsored space science E/PO products or activities. Taking into account the wealth of additional institutions that served as host sites for NASA space science E/PO events and exhibits or as media outlets for NASA space science materials and programs, a total of more than 2,400 institutions and organizations participated in NASA space science E/PO efforts during FY 2003. In addition, the Space Science Enterprise had a substantial presence at more than 100 national and regional scientific and education conferences.

While accurate information on the numbers of participants in NASA space science E/PO events is difficult to gather, estimates indicate that more than 390,000 people were direct participants in NASA-sponsored space science workshops, community and school visits, and other interactive special events, either in person or via live two-way communications links. Over 3 million visitors came to museum exhibitions, planetarium shows, public lectures, and special events featuring content from NASA space science missions and research programs. An additional 6 million Internet users logged in for Webcasts, Web chats, and other Web events. NASA space science materials and programs were made accessible to some 200 million people through conferences at which there were space science exhibits or

displays, radio and television broadcasts, newspaper columns, or other forms of public media for which precise counts of attendance, viewing audience, or readership were not available.

An important measure of the success of the NASA Space Science E/PO Program has always been the numerous awards and other forms of public recognition for educational excellence that NASA space science E/PO products and activities receive. FY 2003 was no exception, with more than 30 such awards and recognitions received. What was notable was that many of these awards came from outside of the usual community of science educators. For example, a regional Emmy award was presented to the NASA CONNECT program, "[Data Analysis and Measurement: Having a Solar Blast!](#)," and a Telly Award was presented to the Spitzer Space Telescope mission's Ask an Astronomer video, "[Why Does the Moon Look Like It Changes?](#)" Recognition of the NASA Space Science E/PO Program as a whole came in the form of a NASA Outstanding Leadership Medal presented to Dr. Jeffrey Rosendhal for his tireless efforts to envision, initiate, and develop the program over the last ten years.



NASA Administrator Sean O'Keefe (left) and Deputy Administrator Frederick D. Gregory (right) present NASA Outstanding Leadership Medal to Dr. Jeffrey Rosendhal. (Credit: NASA/Bill Ingalls)

Major advances were made in FY 2003 in providing timely and up-to-date resources to science centers, museums, and planetariums. A [Mars Visualization Alliance](#) was established to bring near-real-time images and updates from the Mars Exploration Rovers to over a hundred participating science centers, museums, and planetariums. Each participating institution would incorporate these materials into live programs and special events staged in their own galleries and theaters. The [ViewSpace](#) program, already widely recognized for its innovative multimedia presentations featuring current space science images, narrative text, and background music, began a pilot program aimed at improving the currency of its programs. Instead of sending

the **ViewSpace** materials on CDs to the more than 100 participating science centers, museums, and planetariums that have **ViewSpace** galleries, a pilot program to provide **ViewSpace** updates over the Internet was conducted in FY 2003. Internet delivery will allow updates of the **ViewSpace** content as often as several times a day when there is breaking space science news.

Meanwhile, a suite of more traditional science center exhibitions and planetarium shows continued to bring recent NASA space science discoveries to the public in venues across the country. The “**Cosmic Questions: Our Place in Space and Time**”, “**Hubble Space Telescope: New Views of the Universe II**”, and “**MarsQuest**” exhibitions continued their national tours at sites ranging from Miami to Boston and across the Midwest. The “**MarsQuest**” planetarium show played in more than 20 major planetarium facilities in FY 2003, and the “**Northern Lights**” planetarium showkit was distributed to more than 100 small planetariums. Distribution of the “**Ringworld**” planetarium show also began in FY 2003, in anticipation of the Cassini-Huygens mission’s arrival at Saturn on July 1, 2004.

The Space Science Enterprise’s agenda of engaging the community of NASA-sponsored space science researchers in active collaborations with minority institutions proved its worth in FY 2003 as the first cohort of projects in the NASA Minority University and College Education and Research Partnership Initiative (MUCERPI) in Space Science completed their planned 3-year grant periods. Spectacular successes in establishing new space science faculty positions, new space science courses and degree programs, and new collaborations with NASA space science missions, flight projects, and research projects were reported by the 15 minority universities involved. A competitive solicitation conducted during FY 2003 established a second cohort of 16 minority universities who would receive MUCERPI



Guests at the “**Cosmic Questions**” exhibit opening at the National Geographic Society’s Explorers Hall use a near-infrared camera to see what their eyes cannot. The exhibition contains many examples of multi-wavelength observing. (Credit: Mark Thiessen/ Copyright National Geographic Society)



Telescope for solar observing captures the attention of students at Southern University for MUCERPI program activity. (Credit: G. Stacy, Southern University)

awards beginning in FY 2004. Building on the success of the MUCERPI program, the Space Science Enterprise planned to extend the concept of active partnerships with space science researchers to a much broader community of minority scientists through a special workshop, “**Chicago 2004**”, to be convened at the Chicago Hilton in June 2004.

In order to bring more coherence to the vast array of space science educational materials now available through the NASA Space Science E/PO Program, planning began in FY 2003 to build a Space Science Education Framework. Such a framework would lay out the story of space science and then show how key elements of that story are linked to national science standards at each of the various grade levels and also linked to readily available curriculum enhancement materials. This will give educators a standards-aligned sequencing of space science topics that they can use as a guide to find materials to use at each point in the curriculum. It will also give product developers a guide to understanding how materials they are planning to develop might best fit into the sequence, and to finding areas where new materials might be most useful. Work on fully defining the framework design will be completed in FY 2004, after which work on filling the details of the framework itself will begin.

Meanwhile, the NASA **Space Science Education Resource Directory (SSERD)** at <http://teachspacescience.stsci.edu> continued to be the primary mechanism for disseminating space science educational materials. At the end of FY 2003, 440 products were registered in the SSERD, with 322 of them accessible through online searches. Searches in the **SSERD** are limited to those products that are readily available as downloadable files or as multimedia products that can be ordered through a **SSERD** partnership with the NASA Central Operation of Resources for Educators (CORE) at



"Auroras! Mysterious Lights in the Sky" was developed to support Sun-Earth Day 2003, whose theme was "Live from the Aurora."
(Credit and Copyright: Jan Curtis)

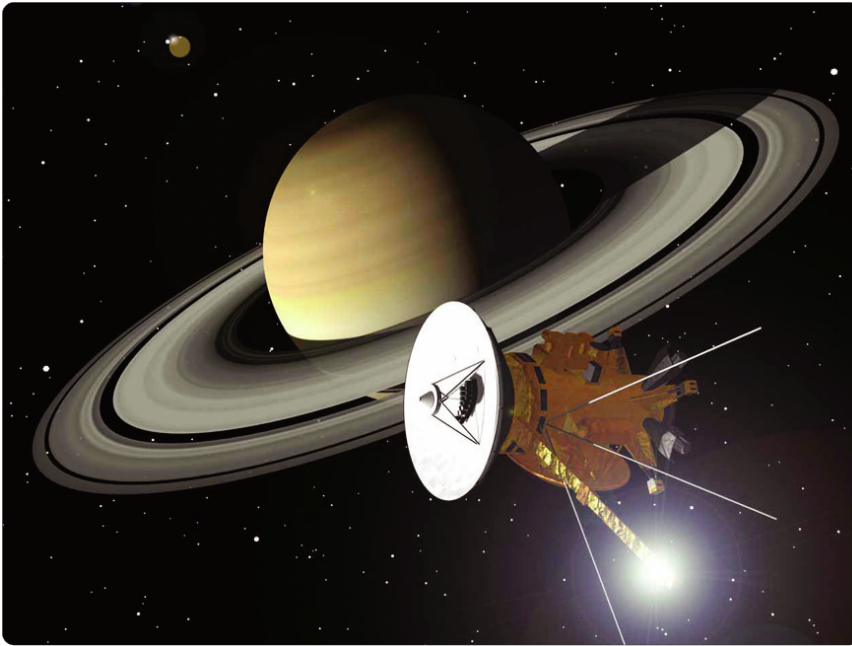
<http://core.nasa.gov>. Among the many new products registered in the SSERD during FY 2003 were "Living With a Star: From Sunscreen to Space Weather", a new guide for middle school teachers that is part of the Lawrence Hall of Science's "Great Explorations in Math and Science" (GEMS) series, and "Auroras! Mysterious Lights in the Sky", a video and interactive booklet for primary grade students developed by the Sun-Earth Connection Forum.

The NASA Space Science E/PO program conducted nearly 200 educational activities that directly supported classroom education, nearly 140 educational activities directed specifically to the general public, and nearly a dozen activities that were aimed at improving the participation of the space science community in E/PO activities in FY 2003.

In anticipation of the January 2004 arrival of the Mars Exploration Rovers (MER) on Mars, "To Mars with MER", a series of six hour-long PBS broadcasts in the "Passport to Knowledge" Program, began in FY 2003. The series consists of three educational broadcasts targeted at science centers, schools, and planetariums, and three prime-time documentaries targeted at the general public. The first educational broadcast, "Countdown to Mars," originated live from DePaul University in Chicago and NASA's Jet Propulsion Laboratory in Pasadena on May 1, 2003. The first public documentary, "Bouncing to Mars," aired in summer 2003.

Preparations were also being made in FY 2003 to engage students, educators, and the public in future mission events. In preparation for the arrival of the Cassini-Huygens spacecraft at Saturn in July 2004, a Saturn Observation Campaign was established. Through this campaign, both amateur and professional astronomers prepared to share their knowledge with the public through viewing events and other activities that correspond with Cassini-Huygens' exploration of Saturn and its moons. At the University of Colorado, a dust-counting instrument was being prepared by a team of students to fly on the New Horizons spacecraft to Pluto and the Kuiper Belt. This instrument will not only provide information on the dust particles encountered by New Horizons, it will also serve as the basis for data analysis projects involving precollege students and teachers in the explorations of Pluto and the Kuiper Belt.

Numerous workshops for individual teachers held in FY 2003 offered educators the opportunity to experience some of the excitement of conducting space science flight missions and increase their understanding of the discoveries made by these missions and research programs. Topics such as "Beyond the Visible Universe: Teaching Invisible Astronomy," "The Great Desert: Geology and Life on Mars and in the Southwest," and "Towards Other Planetary Systems" are just a few examples of the many subjects covered by these workshops.



An artist's conception shows the Cassini spacecraft approaching Saturn, the subject of the "RingWorld" Planetarium show. (Credit: NASA Jet Propulsion Laboratory)

Evaluation of impact and effectiveness continued to play a major role in the NASA Space Science E/PO Program in FY 2003. The NASA Space Science Advisory Committee (SScAC) received and accepted the final report from its E/PO Task Force's study, "Implementing the Office of Space Science (OSS) Education/Public Outreach Strategy: A Critical Examination at the Six-year Mark". In addition, preliminary findings from Phase III of the Lesley University Program Evaluation and Research Group's (PERG) evaluation of the NASA Space Science E/PO Program became available. Both of these studies found that the NASA Space Science E/PO Program was having a very positive and widespread impact on the audiences it serves. Educators applauded the high quality and rich variety of space science education resources being made available to them. Scientists recognized that E/PO had become an important part of their work as scientists. Previously disenfranchised communities, such as underrepresented minorities and students with disabilities, commended the NASA Space Science Enterprise for making genuinely productive and useful efforts to include them in a broad range of space science activities.

The evaluation studies also provided a number of critical recommendations for building upon previous successes and expanding beyond the impacts already achieved. The highest priorities among these recommendations were to develop a space science curriculum framework to bring greater coherence to the wealth of space science E/PO materials being produced, to provide regular professional

development opportunities for the people implementing space science E/PO programs, and to continue to expand opportunities for increasingly wider and more diverse audiences to become genuinely involved in NASA space science activities. These priorities were already being addressed in FY 2003 and will receive even greater attention in FY 2004.

FY 2004 promises to be a busy and productive year for NASA space science E/PO. In January 2004, the [Mars Visualization Alliance](#) will bring the landing of the MER rovers on Mars to audiences across the United States and around the world, while teams of students and educators become engaged in analyzing real data from Mars. On June 8, 2004, a transit of the Sun by Venus

will be broadcast live from Athens, Greece, with a host of educational activities conducted at a variety of venues throughout the Nation. On June 28-29, "[Chicago 2004: A Workshop to Broaden Diversity in NASA Space Science Missions and Research Programs](#)," will take place at the Chicago Hilton. Two days later—early on the morning of July 1, 2004—the Cassini-Huygens probe will arrive at Saturn.

Major museum exhibitions, including "[Cosmic Questions](#)" "[Hubble Space Telescope: New Views of the Universe](#)," and "[MarsQuest](#)" will continue their national tours, and a new exhibition, "Destination Mars", will begin its national tour at the Sheila M. Clark Planetarium in Salt Lake City, UT. E/PO program plans will be developed in FY 2004 for major new missions and programs such as Prometheus and Beyond Einstein, and relationships with community-based organizations such as the Girl Scouts of the USA will be expanded. Overlaying all of these activities will be efforts to fully develop the space science curriculum framework and provide professional development activities for E/PO specialists.

In the words of the SScAC E/PO Task Force, "significant progress has been made to date," and the agenda set for FY 2004 and beyond "will yield especially rich rewards in taking the OSS E/PO program to even higher levels of maturity, effectiveness, and accomplishment."

To inspire the next generation of explorers . . . as only NASA can.

INTRODUCTION

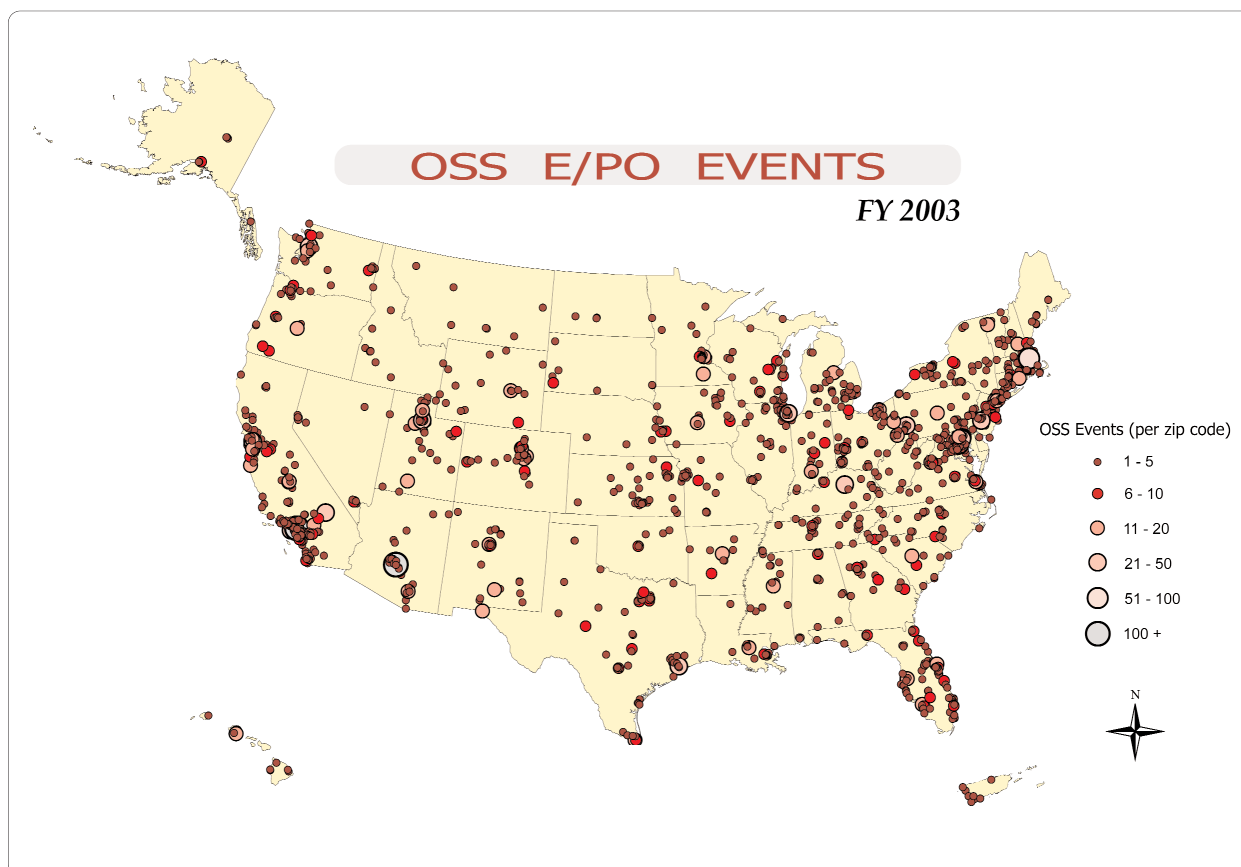
NASA's Space Science Enterprise is one of the primary organizations responsible for carrying out NASA's goal to "explore the Solar System and the Universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere." The Space Science Enterprise is also strongly committed to supporting NASA's goals to "inspire and motivate students to pursue careers in science, technology, engineering, and mathematics," and to "engage the public in shaping and sharing the experience of exploration and discovery." These science and education goals are addressed simultaneously by embedding education and public outreach (E/PO) efforts within every NASA space science mission and research program.

In Federal fiscal year (FY) 2003, nearly 100 NASA space science missions and research programs conducted E/PO programs. This Annual Report summarizes those E/PO efforts as well as the E/PO efforts carried out through special purpose educational programs such as the Initiative to Develop Education through Astronomy and Space Science

(IDEAS) program and the Minority University and College Education and Research Partnership Initiative (MUCERPI) in Space Science. It also includes contributions from projects coordinated or initiated by the NASA Space Science E/PO Support Network. In total, 115 missions, research programs, and special purpose programs contributed to the E/PO efforts described in this report.

Examples of the E/PO efforts covered include award-winning educational Web sites, major exhibitions in museums and science centers, partnerships with minority universities, resources for educators, research projects that allow students and teachers to participate in NASA space science missions, and Webcasts and public television broadcasts about major space science research areas. Throughout FY 2003, there was an emphasis on continually making E/PO more prominent within the NASA space science program and more cohesive with NASA's overall education program, expanding the reach of the Space Science E/PO Program to include an increasingly broader and more diverse variety of participants, and paying greater attention to the coherence and impact of these E/PO efforts.

In total, efforts centered on developing 476 E/PO products and activities are summarized in this report and include the following:



Caption: More than 5,000 E/PO events took place under sponsorship of the Space Science Enterprise in FY 2003, encompassing all 50 states, the District of Columbia, and Puerto Rico. (Credit: Southeast Regional Clearinghouse/Craig Anthony)

- 55 new educational products registered with the [Space Science Education Resource Directory \(SSEED\)](#) during FY 2002;
- 194 educational activities that directly supported classroom education;
- 37 activities emphasizing targeted outreach to specific audiences or addressing special needs within the education community;
- 43 activities providing support to science centers and planetariums;
- 136 educational activities directed at reaching the general public; and
- 11 activities aimed at encouraging members of the space science community to contribute to E/PO activities, and increasing the effectiveness of such efforts.

Taking into account the fact that many of the activities reported involved multiple events that took place in a variety of venues, the total number of E/PO events reported for FY 2003 is more than 5,000—more than a 40 percent increase over the number of events reported in FY 2002. Events took place in all 50 states, the District of Columbia, and Puerto Rico.

While accurate information on the numbers of participants in these events is difficult to gather, we can offer the following estimates:

- Over 390,000 teachers, students, and members of the general public were direct participants in OSS-sponsored workshops, community and school visits, and other interactive special events, either in person or via live, two-way communications links.
- Over 3 million visitors came to museum exhibitions, planetarium shows, public lectures, and special events featuring content from OSS missions and research programs.



E/PO is an integral part of each space science mission. (Credit: NASA Space Telescope Science Institute)

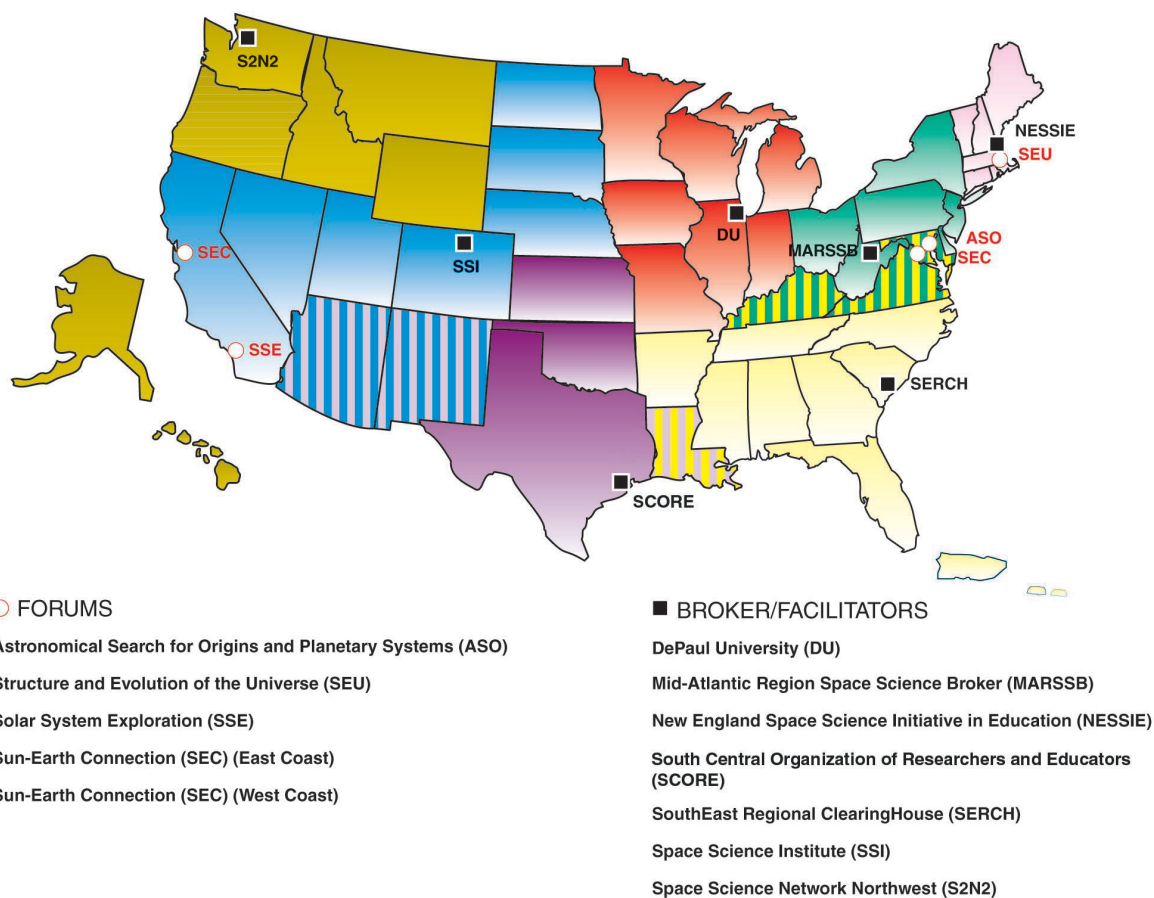
- Over 6 million Internet users logged in for Webcasts, Web chats, and other Web events.
- OSS materials and programs were made accessible to some 200 million people through conferences at which there were OSS exhibits or displays, radio and television broadcasts, newspaper columns, or other forms of public media for which precise counts of attendance, viewing audience, or readership were not available.

Complete information on each of these products and activities, including event dates, locations, and participant counts, appears in appendix A. Summary comments and descriptions of some highlights are contained in the narrative below.

The Space Science E/PO Program is aligned with and strongly supports the NASA mission to **“inspire the next generation of explorers . . . as only NASA can”**. During FY 2003, the Space Science Enterprise was a strong participant in developing NASA's Education Strategy. In addition, E/PO concerns played a prominent role in the development of the 2003 Space Science Strategy (available at <http://spacescience.nasa.gov/admin/pubs/strategy/2003/index.html>). In November 2002, a team of eight nationally recognized educators joined more than 100 members and stakeholders of the space science community for the triennial Space Science Enterprise Strategic Planning Workshop, held in Mission Bay, CA. As a result, E/PO plans and strategies are embedded throughout the 2003 Space Science Strategy, and each science theme's section in the strategy contains a full-page display of E/PO efforts emanating from the research missions and programs in that theme.

The most significant and unique resources that the Space Science Enterprise can bring to E/PO efforts are the results from space science missions and research programs, and the scientific and technical expertise of the space science community. A description of the E/PO program carried out by each NASA space science mission and research program in FY 2003, along with references to the specific E/PO products they developed and E/PO activities they carried out, appears in appendix B. Appendix B also contains descriptions of a variety of special purpose space science E/PO programs such as the Initiative to Develop Education through Astronomy and Space Science (IDEAS) program, the Minority University and College Education and Research Partnership Initiative (MUCERPI) in Space Science, and projects initiated or coordinated by the NASA Space Science E/PO Support Network.

The work of the Space Science E/PO Support Network is essential to the success of the NASA Space Science E/PO Program. The network is comprised of four theme-oriented Education Forums and seven regional Broker/Facilitators. The Forums are charged with coordinating the E/PO efforts of individual space science missions and helping them to



The OSS E/PO Support Network consists of four theme-oriented Education Forums and seven regional Broker/Facilitators.

make their discoveries and results accessible and readily available to the education community. The Broker/Facilitators are charged with facilitating the involvement of space scientists in education through creating partnerships with educators to carry out high-leverage E/PO activities. Each Forum is responsible for supporting missions within one of the four space science research themes: the Astronomical Search for Origins (ASO), Solar System Exploration (SSE), Structure and Evolution of the Universe (SEU), and the Sun-Earth Connection (SEC). Each Broker/Facilitator is responsible for serving space scientists and educators within a specific geographical region.

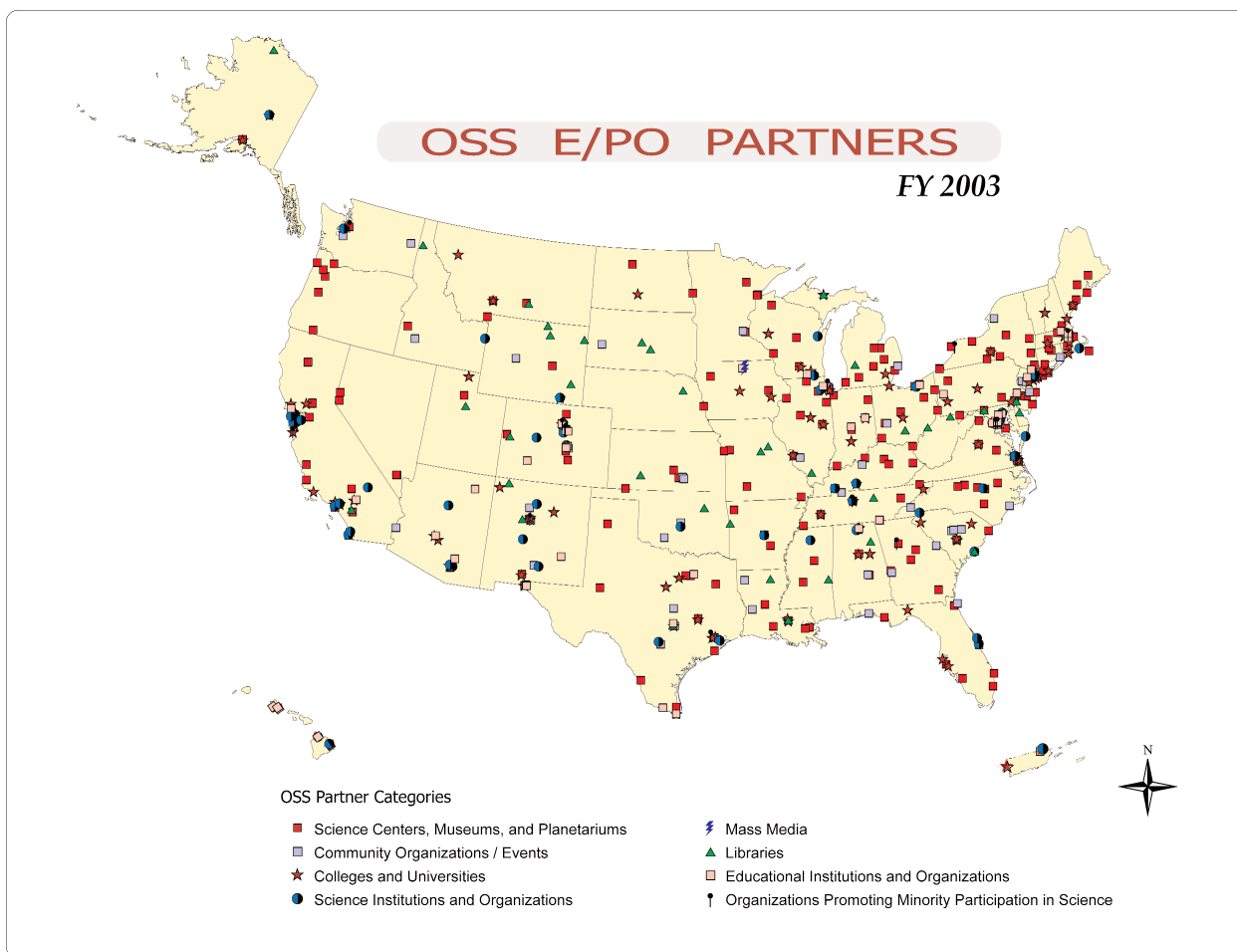
Contact information for each of the Forums and Brokers/Facilitators and lists of the E/PO projects in which they were most substantially involved in FY 2003 are given in appendix B. For the many other projects in which they played the background role of catalyzing, coordinating, and facilitating the E/PO activities of others—as well as coordinating the reporting of those activities for this Annual Report—the work of Support Network members is not explicitly mentioned, but it is implicitly assumed and greatly appreciated. The work of the Support Network in coordinating activities and encouraging the involvement of space

scientists in E/PO is central to many of the successes described in this Annual Report.

The number of space scientists who participate in E/PO efforts is steadily growing. In FY 2003, more than 1,300 scientists, technologists, and support staff supported by the Space Science Enterprise contributed to E/PO efforts—a more than 25 percent increase over the number reported as contributing in FY 2002. Each of these dedicated individuals is acknowledged by name and affiliation in appendix C.

Partnerships with major institutions and organizations within the education and science communities continued to be a fundamental part of the Space Science Enterprise's approach to E/PO. In FY 2003, more than 530 institutional and organizational partners worked closely with the space science E/PO program to help create products and activities that meet the needs of educators and to provide multiplier effects that increase the size and diversity of audiences reached. Among these partners were:

- More than 40 education organizations, including such major organizations as the Mid-continent Research for Education and Learning (McREL), the Association of Science-Technology Centers (ASTC), the Challenger



More than 500 institutions and organizations partnered with OSS to develop and implement E/PO programs in FY 2003. (Credit: Southeast Regional Clearinghouse/Craig Anthony)

Center for Space Science Education, the National Federation of the Blind, and a number of school districts and boards

- 16 organizations promoting minority participation in science, including professional societies of minority scientists such as the National Organization of Black Chemists and Chemical Engineers (NOBCChE), and the National Society of Black Physicists
- Nearly 50 community organizations such as the Girl Scouts, the Boys & Girls Clubs of America, and the Civil Air Patrol
- Nearly 40 libraries, library systems, and library associations
- Nearly 200 museums, science centers, and planetariums
- More than 90 science institutions and organizations
- More than 100 colleges and universities, including 34 minority institutions

A full list of these partners appears in appendix D. This list includes only those institutions and organizations that served as full partners by leading the E/PO efforts for space science missions or programs and/or by leading or contributing substantially to developing space science E/PO

products or activities in FY 2003. Taking into account another 1,900 institutions and organizations whose role was primarily that of serving as additional host sites for NASA space science E/PO events and exhibits, or as media outlets for NASA space science materials and programs, a total of more than 2,400 institutions and organizations participated in NASA space science E/PO efforts during FY 2003. Each such institution or organization is listed in appendix H according to its geographical location. This appendix also serves as an index, cross-referencing each institution or organization to the descriptions in appendix A or B of the programs, activities, or products with which they are associated.

Conferences provide an effective means of contact with organizations and individuals engaged in space science E/PO activities. In FY 2003, OSS had a substantial presence at more than 100 national or regional scientific and education conferences. Exhibits, workshops, materials, and knowledgeable staff were present at such conferences, which provided significant opportunities to discuss space science E/PO resources, opportunities, and issues with conference attendees. These conferences included more than 20 national education and outreach conferences organized

by groups such as the National Science Teachers Association, the International Planetarium Society, and the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers. Also included were nearly 60 regional education and outreach conferences sponsored by groups such as regional library associations and state science teacher associations, as well as nearly 20 science conferences at which OSS encouraged scientists to more actively participate in E/PO activities. A complete list of the conferences at which there was a significant space science presence in FY 2003 appears in appendix E.

One measure of the quality and impact of the NASA space science E/PO program is the public recognition that it received through more than 30 awards given to various facets of the program in FY 2003. A complete list of these awards is given in appendix F.

The space science E/PO efforts described here are only one component of a comprehensive Agencywide education program that is led by the NASA Education Enterprise. Contact information for the Education Enterprise and its representatives within the NASA Science and Technology Enterprises and at NASA Centers is given in appendix G.

The information contained in this FY 2003 Annual Report was compiled from data on activities entered into the NASA Education Evaluation Information System (NEEIS) and from information on new products registered in the [Space Science Education Resource Directory \(SSERD\)](#). This information was originally provided by the people responsible for each individual E/PO product or activity. Because the NASA Space Science E/PO Program emphasizes high-leverage approaches and is carried out through extensive partnerships undertaken in a decentralized way, the information that has been reported is bound to be incomplete. This Annual Report should therefore be regarded as a represen-

tative—rather than a comprehensive—compilation of NASA space science E/PO products and activities. The statistical information provided should be regarded as representing lower limits for the quantities reported.

The narrative sections of the report that follow begin by providing summary information on awards and other forms of public recognition that the OSS E/PO program received in FY 2003. The sections then provide statistical summaries and describe highlights of E/PO efforts in each of the following categories:

- **Science Center Shows/Exhibits:** planetarium shows and museum or science center exhibitions
- **Targeted Outreach:** activities that provide substantial targeted outreach to underserved/underutilized groups
- **Educational Products:** products designed for use in classrooms, for enhancing the public understanding of science, and/or for special interest groups
- **Educational Activities:** activities primarily intended to enhance formal classroom education, the public understanding of science, or the involvement of scientists in E/PO

The examples of products and activities cited in this narrative represent just a few highlights from the rich portfolio of products and activities that are fully laid out in the appendices. The main body of the report concludes with a discussion of program evaluation and a look at future plans for the NASA Space Science E/PO Program. Appendices and indices then provide comprehensive details and cross-references on all OSS E/PO products and activities that were reported for FY 2003. Live links and additional search capabilities may be found in the online version of this report at <http://spacescience.nasa.gov/education>, under the link to “Annual Reports.”

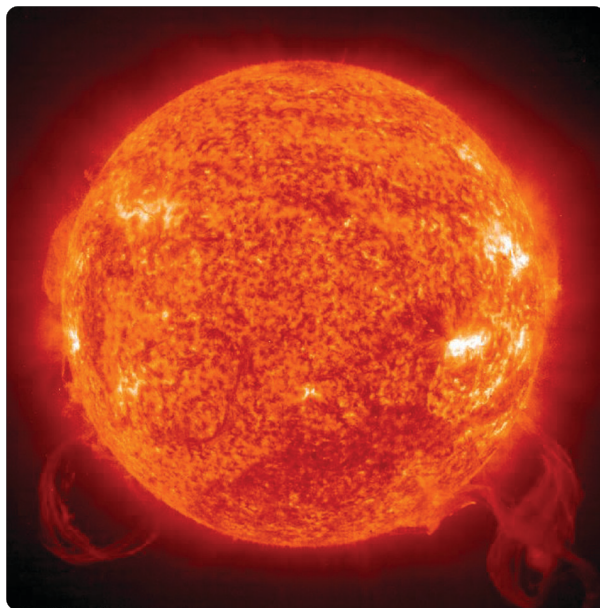
"This was great. It was like seeing a sky show on my PC."

— MUSE Award Judges on ViewSpace

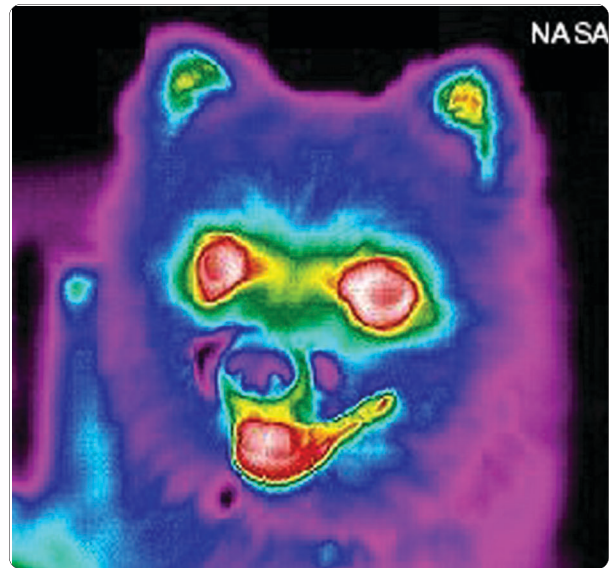
AWARD-WINNING PROJECTS

As was the case in previous years, the NASA Space Science Education and Public Outreach (E/PO) Program received more than 30 new awards or other forms of public recognition in FY 2003. While this number of awards is similar to the numbers received in previous years, the sources of these awards suggest that public recognition of the NASA Space Science E/PO Program is extending to audiences far beyond the community of science educators.

A Pacific Southwest Regional Emmy® Award in the Children/Youth Programming category was given to the NASA CONNECT program, *"Data Analysis and Measurement: Having a Solar Blast!"* In this program, students learned how NASA researchers are investigating the Sun-Earth Connection through four NASA space science missions—SOHO, ACE, IMAGE, and HESSI. Researchers from NASA Goddard Space Flight Center and the University of California at Berkeley were featured in the program. Program partners included the AIAA Foundation, the National Council of Teachers of Mathematics (NCTM), the U.S. Naval Observatory, the University of California at Berkeley, the Maryland Science Center (Baltimore, MD), Hardy Middle



Students used solar images such as this one from SOHO to investigate solar flares and the 11-year solar activity cycle. (Credit: SOHO - EIT Consortium, ESA, NASA)



"Infrared Dog", one of many infrared images of animals from the "Infrared Zoo" components of the "Cool Cosmos" Web site. (Credit: SIRTf/IPAC)

School (Washington, DC), The Odyssey School (Baltimore, MD), the University of Maryland, the AIAA Washington, DC Professional Chapter, Riverdeep, and ePALS. Melissa Joan Hart was the program's featured celebrity. More information about NASA CONNECT is available at <http://connect.larc.nasa.gov>.

A Telly Award, one of the most prestigious honors given to non-broadcast videos and non-network television commercials, was given to the , *"Why Does the Moon Look Like It Changes?"* segment in the "Ask an Astronomer" series. "Ask an Astronomer", available at <http://coolcosmos.ipac.caltech.edu>, is a series of short video clips in which infrared astronomers give answers to questions submitted to the "Cool Cosmos" Web site. In *"Why Does the Moon Look Like it Changes?"*, carefully conceived 3D animations show how changing illumination from the Sun makes the Moon appear to change its shape. These videos, and the "Cool Cosmos" Web site, are a joint effort of the Spitzer Space Telescope mission and the California Institute of Technology's Infrared Processing and Analysis Center (IPAC).

Other awards received from organizations outside of the community of science educators include a Site of the Day award from "Good Housekeeping" magazine, given to the Navigator Program's *"PlanetQuest"* Web site at <http://planetquest.jpl.nasa.gov>; a Communicator Award of Distinction and a Communicator Award of Excellence, given to the Discovery Program's *"Unlocking the Mysteries: NASA's Discovery Program"* video; and Golden Web Awards, given to the Spitzer Space Telescope/IPAC "Cool Cosmos" Web site for its flash animation and to the NASA Astrobiology Institute (NAI) for its *"Astroventure"* Web site. In addition, the *"PlanetQuest"* Web site was designated by the Google

Web Directory as the “Top Ranked Site on Extrasolar Planets,” and the PlanetQuest “[Life Signs](#)” activity was designated as an Internet Scout Resource by the Internet Scout Project. Finally, the “[Infrared Yellowstone](#)” and “[Infrared Zoo](#)” components of the “Cool Cosmos” Web site were designated as “Top Sites” by Kids Online.

Of special note from within the science education community was an American Association of Museums Bronze MUSE Award, given to the Hubble Space Telescope’s [ViewSpace](#) project. [ViewSpace](#) is a multimedia exhibit program that uses a PC and a large-format display to show free-running multimedia presentations that combine high-resolution images, digital movies, and animations from HST and other NASA space science missions with interpretive captions and soothing space music. [ViewSpace](#) is continually updated via CD’s or over the Internet and made available free to science centers, planetariums, or museums to use in galleries of their own design. The Muse awards recognize outstanding achievement in museum media. In reviewing [ViewSpace](#), the MUSE judges said, “This was great. It was like seeing a sky show on my PC. And while

the images were spectacular, it wasn’t just about the images. The content was great, too—interesting, clear, well-presented, and wonderfully illustrated.” The MUSE producers added, “with the [ViewSpace](#) project we have found, to our delight, that museum audiences will linger for long periods and drink in Hubble’s amazing views of the universe. The essential accessory to our program is comfortable seats!”

The importance of the Space Science E/PO Program to NASA was recognized by a NASA Outstanding Leadership Medal, given to Dr. Jeffrey Rosendhal, Director of the NASA Space Science E/PO Program. This award is given for “notably outstanding leadership which affects the technical or administrative programs of NASA,” and it is a fitting tribute to the leadership role that Dr. Rosendhal has played in envisioning, initiating, and developing the NASA Space Science E/PO Program over the last 10 years.

A complete list of all the awards reported as being received in FY 2003 throughout the NASA Space Science E/PO program appears in appendix F.

"The magic for me is putting the live stuff into our daily programming. The planetarium truly becomes a place of learning."

— Jon Elvert, President, International Planetarium Society

SCIENCE CENTER SHOWS/EXHIBITS

Science centers, museums, and planetariums play a crucial role in carrying out NASA's goal of "engaging the public in shaping and sharing the experience of exploration and discovery". Through such venues, the discoveries and results from NASA space science missions can be effectively brought to millions of visitors each year. In FY 2003, significant attention was paid to improving the means by which the excitement of current space science missions could be brought instantaneously to hundreds of science centers, museums, and planetariums across the country.

In anticipation of the Mars Exploration Rovers (MER) landings and subsequent explorations of Mars in early FY 2004, NASA's Jet Propulsion Laboratory established a [Mars Visualization Alliance](#). Through this alliance, over 100 museums, science centers, and planetariums stood ready to receive MER images and information daily through a secure, dedicated Web site accessible only to Alliance members. This Web site was designed to ensure access for Alliance members even if the traffic on the agency's Web sites for the public exceeded their planned capacity. An e-mail notification system was designed to give each Alliance member updates on MER plans and breaking news from Mars, and a professional development program was created to give museum staff and docents access to background information and opportunities for discussions with mission scientists through teleconferences and conferences. With these resources available, each Alliance member planned to incorporate MER images and information into special events and live programs at their own facilities. A special location was set up on NASA's Web page to broadly advertise these events. In order to make all of these plans possible, the MER science team made an unprecedented commitment to release all of their images from Mars in near-real-time before even they themselves had a chance to study them. The reaction of International Planetarium Society President Jon Elvert speaks for the entire Alliance community: "The magic for me is putting the live stuff into our daily programming. The planetarium truly becomes a place of learning."



ViewSpace was selected for installation at the new Clark Planetarium in Salt Lake City. (Credit: Clark Planetarium)



A young visitor to "Cosmic Questions" gets a "feel" for the Milky Way's structure. (Credit:Smithsonian Astrophysical Observatory/)

Another major step towards bringing more timely material to science centers, museums, and planetariums was taken by the Space Telescope Science Institute's award-winning [ViewSpace](#) program. Based on the work done in prior years, the [ViewSpace](#) community had grown to encompass over 100 science centers, museums, and planetariums. Each institution had built a special gallery in which to continuously show [ViewSpace](#) programming to their visitors. Regular updates of the [ViewSpace](#) content were being delivered quarterly to each institution through CDs containing a new set of the high-resolution images, digital video clips, interpretive text, and space music that comprise the [ViewSpace](#) multi-media presentations. In FY 2003, a pilot program to improve the delivery speed and frequency of [ViewSpace](#) updates by delivering them over the Internet was initiated at eight [ViewSpace](#) sites. This Internet delivery allows much more frequent updating of the [ViewSpace](#) content—as often as several times a day when there is breaking space science news. In addition, the more frequent updating allows the [ViewSpace](#) content to include a much wider variety of subjects than was previously possible. Future content will include not only the images from Hubble Space Telescope, upon which [ViewSpace](#) was born, but also content from other NASA space science missions, including the Spitzer Space Telescope, the Cassini mission to Saturn, and, of course, the Mars Exploration Rovers (MER).

Engaging the public through the more traditional means of major museum and science center exhibitions and planetarium shows also continued in FY 2003. Some examples of the exhibitions and planetarium shows featuring NASA space science content that were on tour or showing at venues across

the country in FY 2003 are described below. More complete listings of them are given in appendix A.

More than a quarter million people visited the 5,000-square-foot exhibition, ["Cosmic Questions: Our Place in Space and Time"](#), during its 3-month opening run at the Museum of Science in Boston. ["Cosmic Questions"](#) challenges audiences to explore fundamental questions and recent discoveries about the origin, evolution, and structure of the Universe. After completing its opening, ["Cosmic Questions"](#) began a national tour under the management of the

Association for Science-Technology Centers with a stop at the Midland Center for the Arts in Midland, MI. ["Hubble Space Telescope: New Views of the Universe II"](#), an exhibition that features the best of Hubble's beautiful images and shows visitors how this suite of scientific instruments is challenging widely held assumptions about the cosmos, visited the Virginia Air and Space Museum in Hampton, VA, the Kirby Science Discovery Center in Sioux Falls, SD, the U.S. Space and Rocket Center in Huntsville, AL, and the Miami Museum of Science in Miami, FL, under the auspices of the Smithsonian Institution Traveling Exhibition Service (SITES). ["MarsQuest"](#), a 4,500-square-foot traveling exhibition that invites visitors to share in the excitement of the scientific exploration of Mars, completed its planned 3-year national tour with stops at the Lafayette Natural History Museum and Planetarium in Lafayette, LA, the Liberty Science Center in Jersey City, NJ, and the Boonshoft Museum of Discovery in Dayton, OH. An updated and revised version of ["MarsQuest"](#) will begin a national tour in FY 2004.

The ["MarsQuest"](#) planetarium show, originally released as a companion to the ["MarsQuest"](#) traveling exhibition, was shown in 23 different planetariums in FY 2003. By the end of the year, ["MarsQuest"](#) had played in 45 facilities around the world under the auspices of its producers, Loch Ness Productions and the Space Science Institute. Even greater distribution was attained by the ["Northern Lights"](#) planetarium show that was developed as a show kit for small planetariums by the Lawrence Hall of Science (LHS) and the NASA Sun-Earth Connection (SEC) Education Forum at the University of California, Berkeley. Released as part of the LHS' audience participatory program series, Planetarium Activities for Student Success (PASS), the ["Northern Lights"](#)



"Northern Lights" classroom activities include selecting ideal locales on Earth for aurora watching, determining the altitudes of simulated aurora, predicting aurora on other planets, spectrum studies, and aurora mythology. (Credit: Lawrence Hall of Science)

show uses images, videos, and activities to demonstrate the connectivity between our Sun and the Earth. Since its release in the early summer of 2002, "Northern Lights" has been distributed to more than 100 institutions nationwide.

Through programs such as those described above, a total of more than 350 science centers, museums, and planetariums participated in NASA Space Science E/PO efforts in FY 2003. While all of these institutions served as venues for exhibitions, planetarium shows, or other activities based on NASA space science content, nearly 200 of them partnered with the Space Science Enterprise in more substantial ways. Some of them contributed substantially to developing exhibitions or planetarium shows in cooperation with NASA space science missions. Others developed special galleries or put on special public events of their own design in order to bring programs such as those available from [ViewSpace](#) or anticipated from the [Mars Visualization Alliance](#) to their local audiences. While accurate audience counts are difficult to attain, our conservative estimates indicate that more than 2 million visitors to science centers, museums, and planetariums were engaged in programs and activities based on NASA space science missions in FY 2003.

“A diverse cadre of scientists, assembled from a broad range of institutions, is essential to the future success of NASA space science missions and research programs”

— Dr. Edward J. Weiler,
NASA Associate Administrator
for Space Science

TARGETED OUTREACH

NASA, through its Education Enterprise, has made a strong commitment to “increasing the number and diversity of students, teachers, faculty, and researchers from underrepresented and underserved communities in NASA-related science, technology, engineering, and mathematics fields.” The Space Science Enterprise endorses this commitment as being essential not only to the future vitality of our nation, but as being essential to the future of NASA space science. The NASA Space Science Education and Public Outreach (E/PO) Program is therefore engaged in a wide variety of efforts aimed at broadening the diversity of participants in NASA space science education and research programs. While encouraging the involvement of participants from underserved and underutilized groups is a facet of all space science E/PO projects, the projects categorized as “targeted outreach” are those projects that make such involvement their primary focus. Highlights from some of the FY 2003 targeted outreach projects are given below. Descriptions of these and other targeted outreach projects may be found in appendix A.

The NASA Minority University and College Education and Research Partnership Initiative (MUCERPI) in Space Science is a grants program, carried out in collaboration with the NASA Office of Education, that offers minority universities opportunities to develop academic and/or research capabilities in space science. The hallmark of this program—and perhaps the most important key to its success—is that the Space Science Enterprise plays an active role in providing guidance and in engaging the community of NASA-sponsored space science researchers to serve as active partners in collaborations with the minority institutions involved in the program.

The planned 3-year period of performance for the first cohort of minority universities to receive MUCERPI grants drew to a close in FY 2003. The 3-year progress reports submitted by these 15 institutions tell remarkable stories of success. Collectively, the 15 institutions engaged in research collabora-



Students from Southern University and Louisiana State University prepare to launch three student-designed and -built experiments aboard a high-altitude helium balloon.

tions with 10 NASA space science missions or suborbital projects and nearly 50 working partnerships with major space science research groups at universities, laboratories, and NASA Centers across the country. In academic programs, they established on their campuses 25 new or redirected space science faculty positions; 12 new or revised space science degree programs, for which nearly 100 students have signed up; and 68 new or revised space science courses, with a total enrollment to date of nearly 1,800 students. They also engaged in a wide variety of teacher training, precollege outreach, and public outreach programs. These successes clearly demonstrate that vibrant academic and research programs in space science can be built at minority institutions through serious partnerships with established space science researchers.

Also in FY 2003, a competitive solicitation was conducted for a second round of MUCERPI awards. As a result, 16 minority institutions, including 8 Historically Black Colleges and Universities (HBCU), 5 Hispanic-Serving Institutions (HSI), 2 Tribal Colleges and Universities (TCU), and 1 Minority-Predominant Institution (MPI), will begin MUCERPI projects in FY 2004. More than 50 research or educational institutions will be active partners in these projects. A list of the institutions involved is given in table 1.

Table 1: Institutions Participating in MUCERPI 2003**Lead Institutions****Historically Black Colleges and Universities**

Alabama A&M University
 Fisk University
 Hampton University
 Norfolk State University
 North Carolina A&T State University
 South Carolina State University
 Southern University, Baton Rouge
 University of the District of Columbia

Minority-Predominant Institutions

Medgar Evers College

Hispanic-Serving Institutions

California State University at Los Angeles
 California State University at San Bernadino
 University of Houston–Downtown
 University of Puerto Rico at Mayagüez
 University of Texas at El Paso

Tribal Colleges and Universities

Salish Kootenai College
 Southwestern Indian Polytechnic Institute

Partner Institutions**NASA Field Centers and Affiliates**

NASA Ames Research Center
 NASA Astrobiology Institute
 NASA Goddard Space Flight Center
 NASA Jet Propulsion Laboratory
 NASA Johnson Space Center
 NASA Langley Research Center
 NASA Marshall Space Flight Center
 Lunar and Planetary Institute

Other Research Institutions

Arecibo Observatory
 Lawrence Berkeley National Laboratory
 Lawrence Livermore National Laboratory
 Orbital Sciences Corporation
 Planetary Science Institute
 Smithsonian Astrophysical Observatory
 Thomas Jefferson National Accelerator
 U.S. Geological Survey, Flagstaff

Colleges and Universities

Alcorn State University
 Bennett College
 Borough of Manhattan Community College
 Boston University
 Bronx Community College
 Catholic University of America
 City College of New York
 College of Staten Island
 Harvard University
 Holyoke Community College of Massachusetts
 Hostos Community College
 Hunter College
 Johns Hopkins University
 LaGuardia Community College
 Louisiana State University
 Montana State University
 Pasadena City College
 Queensborough Community College
 Rice University
 Texas Southern University
 University of Alabama, Huntsville
 University of Alaska, Fairbanks
 University of Colorado at Boulder
 University of Maryland, College Park
 University of Maryland, Baltimore County
 University of New Mexico
 University of North Carolina, Greensboro
 University of Southern California
 University of Texas, Brownsville
 University of Virginia
 University of Wisconsin
 Vanderbilt University
 Virginia Institute of Technology
 Yale University

Science Centers, Museums, and Planetariums

American Museum of Natural History
 Houston Museum of Natural Sciences
 Insights Museum
 New Mexico Museum of Natural History
 Virginia Air and Space Center

Educational and Community Organizations

Back Bay Amateur Astronomer Association
 Raul Yzaguirre School (Brownsville, TX)
 South Carolina Governor's School
 Tejano Center for Community Concerns
 Virginia Beach Public Schools



Participants in “Exceptional Space Science Materials for Exceptional Students” workshops experience simulated impairments to enable better appreciation of learning difficulties. (Credit: Support Network Broker, Southeast Regional Clearinghouse)

Through a new NASA University Research Center established in FY 2003, a Hispanic-Serving Institution will provide critical support for a major future NASA space science mission. The University of Texas at Brownsville (UTB) **Center for Gravitational Wave Astronomy (CGWA)** will provide computational capabilities that will predict the forms of gravitational waves expected to be detected by the Laser Interferometer Space Antenna (LISA) mission, scheduled for launch in the next decade. In so doing, the UTB **CGWA** will train a new generation of scientists to work at the intersection of gravitational wave data analysis, astrophysics, and numerical relativity. The postdoctoral assistants, graduate students, and undergraduates at the UTB **CGWA** be placed squarely at the forefront of what is expected to be an entirely new and remarkably fruitful field of space science research.

Continued discussions with professional societies of minority scientists in FY 2003 led the Space Science Enterprise to make a greater commitment to involving professional-level underrepresented minority scientists and minority university scientists as scientists in space science missions and research programs. This is consistent with a strong recommendation of the NASA Space Science Advisory Committee’s Task Force on Education and Public Outreach (E/PO) that OSS “expand and intensify” its “pioneering efforts to attract and better integrate minorities into E/PO projects and into the mainstream of OSS science programs.” As a result, plans were made to sponsor “Chicago 2004: A Workshop to Foster Broader Participation in NASA Space Science Missions And Research Programs”. This workshop is aimed at bringing together NASA personnel, current OSS-funded scientists and educators, and a diverse array of scientists and educators who are interested in participating in future NASA space science missions and research programs. A specific goal of the workshop is to seed personal contacts among a much more diverse community of investigators than has traditionally been active in

NASA space science missions. In addition, all participants are expected to gain insights and contacts leading to a better understanding of how the NASA space science program is organized, planned, and conducted; how missions and research programs are conceived; how mission and research teams are formed; and how successful proposals are constructed. The workshop will be held at the Hilton Chicago on June 28–29, 2004.

Efforts to make space science accessible to special needs students continued in FY 2003 with a series of “**Exceptional Space Science Materials for Exceptional Students**” workshops coordinated by the Southeast Regional Clearinghouse (SERCH) Broker/Facilitator. At these workshops, educators of exceptional students and developers of NASA space science education materials are brought together to meld their knowledge of the diversity of exceptional classroom and audience needs with the wide variety of standards-based space science educational support materials available from NASA. Participants are encouraged to simulate a variety of disabilities using visual impairment goggles, hearing impairment simulators, and other materials and devices to simulate physical disabilities. Discussions regarding learning disabilities such as ADD and ADHD are held throughout the workshop. As a result, new ways to bring space science resources to exceptional students are found, and a network of exceptional educators and NASA mission-related personnel is created.



GSUSA workshop participants observe crust material samples to determine the history of a “mystery planet”. (Credit: NASA Jet Propulsion Laboratory)

In a continuing effort to inspire young girls to consider careers in science, mathematics, and technology, the NASA Solar System Exploration Forum at the Jet Propulsion Laboratory established a formal agreement with the **Girl Scouts of the USA (GSUSA)** on behalf of the NASA Space Science E/PO program. This agreement establishes collaboration in all areas of space science content with the goal of

making science comfortable and fun for Girl Scouts and their adult trainers, leaders, and volunteers. The collaborative effort includes providing content for existing and newly created GSUSA programs, including "Leader" magazine articles, workshops, Web site content, space books and booklets, and patch programs. It also serves as a pilot program that is expected to encompass all areas of NASA education in future years.

Through targeted outreach programs such as these, the diversity of participants in NASA space science programs continues to expand to an ever-wider set of communities. In this way, NASA's quest to explore the Solar System and the Universe beyond genuinely becomes the quest of all Americans.

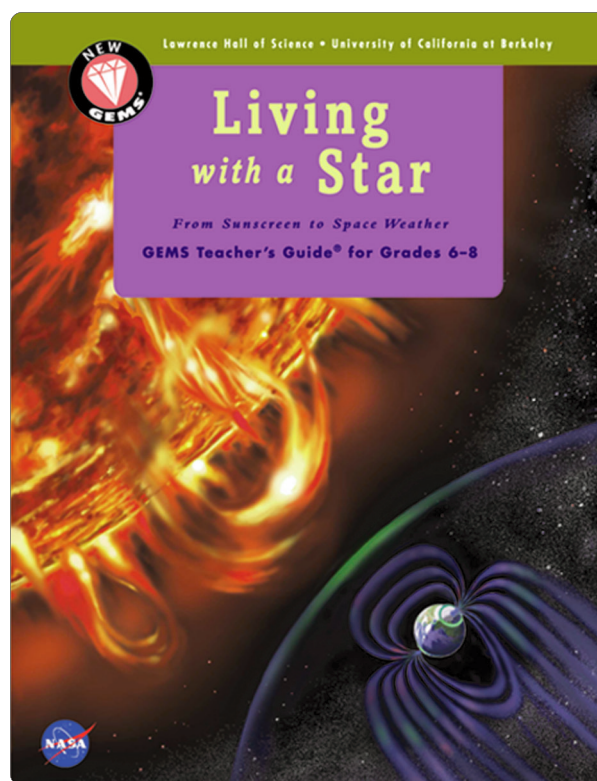
“To reach the next level of effectiveness, the NASA Space Science E/PO Programs create a Space Science Education Framework . . . a bridge between the science and mathematics of OSS missions and research and the needs of the educational system.”

— Space Science Advisory Committee
E/PO Task Force

EDUCATIONAL PRODUCTS

In FY 2003, 55 new education products were developed and registered in the NASA [Space Science Education Resource Directory \(SSERD\)](#). These products continued the tradition of using the unique appeal of space science missions and discoveries to enhance what is taught in the classroom. Most of these new products were developed by one or more NASA space science missions or researchers working in collaboration with professional educators and the NASA Space Science E/PO Support Network. With these additions, the total number of products registered in the [SSERD](#) at the close of FY 2003 was 440.

The users of these products have generally been very positive about them. Educators contacted by the Lesley University Program Evaluation and Research Group (PERG) “consistently report that they (and those they are educating) find space science to be exciting, engaging, and complex.” They also report that “resources and activities that feature space science engage students and give them motivation to learn scientific concepts in ways that less dramatic topic areas might not.” However, they also report some significant barriers to fully utilizing these classroom resources. The basic problem is that available resources exceed available time. With hundreds of space science materials available, but only very limited class time that can be devoted to space science, most of the materials may never actually be used. Educators require significant assistance in locating those materials that will best serve the particular points in the curriculum that they are tasked to teach.



In *Living with a Star*, students become solar scientists, studying fascinating aspects of the Sun and Earth and the critical connections between the two. (Credit: Lawrence Hall of Science)

To meet these needs, planning began in FY 2003 to develop a Space Science Education Framework. Developed in response to specific recommendations made by the NASA Space Science Advisory Council (SScAC) Task Force on E/PO, this framework would provide a bridge between the science and mathematics of NASA space science missions and research and the needs of the educational system. It would be aligned with the National Science, Mathematics, and Technology Standards, and it would provide a standards-aligned sequencing of space science topics throughout the K-12 years. Educators could use the Framework to quickly identify materials to use at specific points in the curriculum. Product developers could use the Framework as a guide to what materials might be most useful to concentrate on in the future. By the end of FY 2003, a Framework Leadership and Planning Group (LPG) had been established and given the mandate to provide a detailed conceptual plan for the Framework and commission its actual construction in FY 2004.

While the Framework is being constructed, the [SSERD](#) will continue to serve as the primary dissemination mechanism for NASA space science E/PO products. Hosted by the Space Telescope Science Institute at <http://teachspace-science.org>, the [SSERD](#) allows educators seeking materials to conduct searches by keyword, browse the directory by topic, or conduct advanced searches by using any combination of keywords, grade levels, formats, and subjects. The



The Space Science Education Resource Directory gives educators access to a wide variety of OSS E/PO materials.

products accessible by searches within the SSERD are only those for which wide-spread distribution mechanisms are readily available. At the close of FY 2003, those distribution mechanisms

were limited to electronic downloads or multimedia distribution on media such as CDs or videotape. Approximately three-fourths of the products in the SSERD were available through such means. Significant steps were taken during FY 2003 towards acquiring one or more commercial partners to provide low-cost distribution services for printed materials. It is hoped that such arrangements will become available during FY 2004.

One example taken from among the many new products released in FY 2003 is “[Living With a Star: From Sunscreen to Space Weather](#)”, a new NASA space science guide for middle school teachers that is part of the Lawrence Hall of Science’s Great Explorations in Math and Science (GEMS) series. Developed by the NASA Sun-Earth Connection Education Forum (SECEF) in collaboration with GEM, this guide allows students to explore the Earth’s dynamic relationship to the Sun through such vehicles as a space-weather mystery, a mock mission to outer space, and ultraviolet experiments.



Some of the 270 young Chicagoans who were happy to learn about Mars and NASA’s MER missions during “Countdown to Mars.” (Credit: Space Science Center for Education and Outreach, DePaul University)

Another example is “[Auroras: Mysterious Lights in the Sky](#)”. “[Auroras](#)” is directed at primary school children, as well as their parents and teachers (it includes a special section of science facts at the end of the book). The striking aurora images are real—in the online version they are from NASA spacecraft, and in the print version the images are photographs taken by Jan Curtis. A collaboration between SECEF and Ideum, the book was developed in conjunction with Sun-Earth Day 2003, whose theme was “[Live from the Aurora](#).” Further information on these and other new products released in FY 2003 appear in appendix A.

“I would really like to be into more science... I never thought science could be so exciting!”

— Student commenting on Space Day at DePaul University

EDUCATIONAL ACTIVITIES

Educational activities conducted by the NASA Space Science E/PO Program engage educators, students, and the public as directly as possible in space science missions and discoveries. Opportunities to conduct genuine research projects using real data and instruments, opportunities to learn about new discoveries as they are being made, and opportunities to interact directly with the scientists and technologists who are conducting the missions and research programs are emphasized. This direct contact with the content of NASA space science missions and research programs is a highly effective way to inspire and motivate students to pursue careers in science, technology, engineering, and mathematics. In FY 2003, the NASA Space Science E/PO program conducted nearly 200 educational activities that directly supported classroom education at the precollege level, nearly 140 educational activities that were directed specifically to the general public, and nearly a dozen special activities aimed at encouraging members of the space science community to contribute to E/PO activities and at improving the effectiveness of their participation. Further comments on and examples of some highlights of these educational activities are given below. Detailed descriptions of these activities appear in appendix A.

With the scheduled landing of the Mars Exploration Rovers (MERs) in early FY 2004, much attention in FY 2003 was focused on the anticipation of those landing events. “**To Mars with MER**”, a series of six hour-long public television broadcasts produced as part of the Passport to Knowledge program, had it’s debut broadcast “Countdown to Mars” on Space Day 2003 (May 1), from DePaul University in Chicago. Some 270 Chicago-area youngsters gathered at DePaul University for a day filled with hands-on activities and a live video link with MER engineers and scientists at NASA’s Jet Propulsion Laboratory (JPL). The broadcast of this event was hosted by Bill Nye the Science Guy and carried on than 120 Public Broadcasting Service (PBS) stations, reaching almost 2 million viewers. Nearly 300 e-mails came in during the broadcast that were answered in real time by MER scientists and engineers at JPL, Arizona State University, and Cornell University. The “**To Mars with MER**” project also includes videos, Web sites, hands-on activities and regional outreach events, all designed to inform and excite youngsters and general audiences about the science, engineering, and people of the MER mission.

The second broadcast in the series was a primetime documentary, “Bouncing to Mars,” that premiered on participating PBS stations in summer 2003. Many stations planned to air or rerun this “behind-the-scenes” story of the time-pressured development of the MER mission during the Fall as the actual MER landings drew closer. Two more programs for science centers, schools and planetariums and two more prime time documentaries for general audiences, timed to coincide with the MER landings and with the anticipated early science results, will complete the “To Mars with MER” series.

Sun-Earth Day 2003 was celebrated on March 18, 2003 with thousands of participants at science museums, schools, and star parties in North America and Europe.

Participants learned about the beautiful displays of auroras (the Northern and Southern Lights), space weather, and catastrophic power outages, as well as the cultures of peoples living at northern latitudes. Two Passport to Knowledge programs supported the Sun-Earth Day festivities. “Living With A Star,” a solar science documentary, was broadcast on February 11, 2003, in order to help prepare students for Sun-Earth Day 2003. “Live From the Aurora” aired on Sun-Earth Day. This documentary used comments from Alaskan natives, a modern dance performance, and the most current science of auroras to introduce the Sun-Earth Connection. Original animation created by NASA's Goddard Space Flight Center showed how physics and chemistry determine the shape and colors of auroras. The videos,



The PlanetQuest activity kits contain essential items to aid amateur astronomers in conducting public outreach programs.



Workshop participants make pinhole camera measurements to calculate the Sun's diameter (Credit: Chabot Science Center)

broadcast nationally on participating PBS stations and NASA-TV, were accompanied by extensive Web-based activities and online resources developed by SECEF at Goddard Space Flight Center.

In anticipation of the Cassini-Huygens spacecraft's arrival at Saturn on July 1, 2004, the **Saturn Observation Campaign** was established by NASA's Jet Propulsion Laboratory to promote space exploration and prime the public for the deluge of stunning images and scientific data expected from Cassini-Huygens.

The **Saturn Observation Campaign** is open to amateur and professional astronomers, giving astronomers an opportunity to share their knowledge and passion for space exploration with their communities. Partnering with local organizations, volunteers use their imagination to hold fun and educational activities, such as viewing events, lectures, and hands-on activities.

Heading even farther into the solar system is the **New Horizons** spacecraft, scheduled to launch in 2006, fly-by Pluto in 2015, and then continue on to explore objects in the Kuiper Belt region beyond Neptune. On board **New Horizons** will be a student dust counter experiment, designed to detect dust particles produced by collisions between asteroids, comets, and Kuiper Belt objects. This instrument is being built entirely by students at the University of Colorado at Boulder; it will be the first science instrument on a NASA planetary mission to be designed, built, and flown by students. With faculty supervision, the students will also distribute data from the instrument and lead a comprehensive effort to bring their experiences to classrooms of all grade levels over the next two decades. The team plans to build high-school-level curricular modules on topics like Pluto and the Kuiper Belt, the role of dust in forming planetary rings, and designing space instruments. The student dust counter experiment is a result of remarkable foresight by the **New Horizons** principal investigator, Alan Stern of the Southwest Research Institute; the New Horizons science leader for E/PO, Fran Bagenal of the University of Colorado; and the Johns Hopkins Applied Physics Laboratory team that is building the spacecraft. The experiment, which will be used as a prototype for future missions, demonstrates that with careful advanced planning, spacecraft enhancements to facilitate major E/PO efforts can be built into the design and development of the spacecraft.



SSI E/PO workshop participants engage in the "Change Game," a simulation of school district education reform. (Credit: Space Science Institute)

Amateur astronomers provide a strong network for public outreach. To support the needs of amateur astronomers for materials and training to improve the effectiveness of their public outreach activities, the Navigator Public Engagement Program at NASA's Jet Propulsion Laboratory, the Astronomical Society of the Pacific (ASP), and the Astronomical League joined forces to create the [Night Sky Network](#). Astronomy clubs that join the [Night Sky Network](#) receive free outreach kits that are designed to be used in a variety of settings, including classrooms, youth group meetings, community college events, and outdoor star parties. Training in the use of the kits is provided through an enclosed training video and also through teleconferences and regional workshops provided by the [Night Sky Network](#). The first kit in the series is a [PlanetQuest](#) kit with hands-on activities and multimedia presentation materials. A second kit that will focus on the expanding universe and black holes is being developed in collaboration with the NASA Structure and Evolution of the Universe Education Forum at the Harvard-Smithsonian Center for Astrophysics.

Numerous workshops for individual teachers were conducted by the E/PO elements of OSS flight missions and research programs in FY 2003. These workshops offered teachers the opportunity to experience some of the excitement of conducting space science flight missions and increase their understanding of the discoveries made by such missions and research programs. In many cases, teacher guides and classroom activities based on the missions or programs were provided as part of the workshop.

["Beyond the Visible Universe: Teaching Invisible Astronomy"](#) was a series of 1-hour workshops presented jointly by the Spitzer Space Telescope and the Stratospheric Observatory for Infrared Astronomy (SOFIA) to raise educators' awareness of NASA's infrared astronomy research programs and their expected contributions to our understanding of the origin and evolution of the Universe. The workshops included information on future opportunities for educators to collaborate with astronomers and participate in conducting astronomical observations while flying onboard the SOFIA research aircraft. ["The Great Desert: Geology and Life on Mars and in the Southwest"](#) was a training workshop provided by the Lunar and Planetary Institute for grade 6 to 12 science teachers. It introduced the teachers to the geology and biology of Mars through analogies with similar features

on Earth. The workshop included both classroom learning and field studies at sites such as the Grand Canyon, Meteor Crater, and hot springs and faults along the Rio Grande Rift. In a completely different setting, the ["Towards Other Planetary Systems"](#) (TOPS) astronomy workshop provided teachers in Hawaii and the Federated States of Micronesia and the Marshall Islands with training in the use of remote telescope observing projects to teach science and mathematics. Under the guidance of the Deep Impact mission, the Hawaii Space Grant Consortium, and the Space Science Network Northwest Broker/Facilitator, the teachers received instruction in the astrometry and photometry of CCD images using image processing software, wrote research papers, and received training in operating portable STARLAB planetariums.

These are just a few examples of the hundreds of workshops that took place in FY 2003. Many of the workshops took place at major national educator conferences such as the National Science Teachers Association (NSTA) meeting in Philadelphia, PA, the National Council of Teachers of Mathematics (NCTM) meeting in San Antonio, TX, and the International Technology Education Association (ITEA) meeting in Nashville, TN. Typically, workshop presenters also staffed a major OSS E/PO exhibit booth, providing a place where teachers could examine materials and discuss them with the space science E/PO staff present at the booth. Teacher workshops were also conducted at regional educators conferences, at museums and science centers in conjunction with major NASA space science exhibitions, and at numerous other venues throughout the country.

Outreach efforts to scientists continued in FY 2003, with the goal of continually increasing the numbers of space scientists who contribute to E/PO activities and improving the effectiveness of their contributions. To this end, E/PO exhibits and/or workshops were displayed or conducted at eleven major meetings of scientists, including meetings of professional societies such as the American Astronomical Society and the American Geophysical Union. In addition, more extensive workshops for scientists interested in E/PO were conducted by the Space Science Institute. These workshops included both introductory sessions for "first-timers" and also more advanced sessions focused on special topics for those with more experience.

“The [NASA Space Science] E/PO program . . . has made remarkable progress in a relatively short period of time.”

— NASA FY 2002 *Performance and Accountability Report*

EVALUATION

Since its inception, the NASA Space Science Education and Public Outreach (E/PO) Program has closely followed the guidance provided in 1996 by an E/PO task force of the NASA Space Science Advisory Committee (SScAC) in its report, “Implementing the Office of Space Science (OSS) Education/Public Outreach Strategy”. This report set forth the strategy for implementing a new space science E/PO program based on their conclusion that “in order to have a significant impact on improving the quality of science, mathematics, and technology education and the public understanding of science in the United States, OSS must take a comprehensive, integrated approach to implementing its education and public outreach programs.” The approach that they recommended centered on “high-leverage activities and the creation of partnerships between space scientists and education communities” in order to “amplify the efforts of individual scientists and ensure that limited funds and in-kind resources are channeled towards activities having the potential for state, regional, or national impact.”

In FY 2003, the final report was received from a second E/PO task force convened by SScAC to assess the progress that had been made in implementing a NASA Space Science E/PO program based on the recommendations of the previous task force report. This new report, “Implementing the Office of Space Science Education/Public Outreach Strategy: A Critical Evaluation at the 6-Year Mark”, was quite complimentary about the Space Science E/PO Program’s accomplishments and successes. Noting that the program “operates on the premise that achieving genuine success in affecting the quality of science, technology, engineering, and mathematics education in America will not be won through short-term activities with immediate results, but rather through a long-term commitment requiring a sustained effort in education and public outreach,” the Task Force cited the following specific accomplishments and successes:

- Direct engagement of OSS missions and the space science research community in education and in contributing to the public understanding of science;
- A rich harvest of educational programs and materials directed towards many types of audiences in diverse communities across the country;
- Significant steps towards involving minorities in the mainstream of OSS’s scientific, technical, and educational programs and in developing educational materials directed towards audiences that have not previously been served by NASA; and
- Substantial leveraging of resources through collaboration with hundreds of educational institutions and organizations across the country.

The task force also identified a number of areas “for particular attention” in future years—areas that they believed would “yield especially rich rewards in taking the OSS E/PO Program to even higher levels of maturity, effectiveness and accomplishment.” In summary, these areas are to:

- Make educational products more accessible and organize them in a more coherent way;
- Increase the inclusiveness of the program by involving new audiences, science topics, materials, and partnerships;
- Expand and intensify pioneering efforts to attract and better integrate minorities into E/PO projects and into the mainstream of OSS science programs;
- Enhance efforts directed towards quality control and obtaining a better understanding of program impact;
- Increase the effectiveness of the OSS E/PO Support Network by focusing the activities of the Broker/Facilitators on their primary roles;
- Strengthen and expand professional development efforts for E/PO professionals, scientists, and the education community;
- Enhance internal and external communications; and



Wyoming Astronomy Camp students making true-color images of the spiral galaxy M51. (Credit: University of Wyoming)



Dr. Paul Knappenberger of the Adler Planetarium and Astronomy Museum chaired the SScAC Task Force on E/PO. (Credit: Adler Planetarium and Astronomy Museum)

■ Identify and acquire critical resources required for long-term sustainability.

Many efforts to make improvements in these areas were already underway in FY 2003, and plans for increasing the emphasis upon them are discussed in the “Future Plans” section that follows.

Also in FY 2003, the Space Science E/PO Program’s external evaluators, the Program Evaluation and

Research Group (PERG) at Lesley University, continued their Phase III evaluation covering the period from October 2001 to October 2003. This phase of the evaluation laid the groundwork for the complex task of understanding the impact that the Space Science E/PO Program is having upon its intended audiences. Each of the various audiences that the Space Science E/PO Program serves has different needs, and impact therefore manifests itself differently within each group of users. Through interviews, surveys, observations, and other methods, the PERG evaluators collected data from each audience about its needs. The evaluators then began defining impact for each audience and detailing the attributes that effective resources would have for each audience.

From this information, the PERG group found that the Space Science E/PO Program was taking a number of steps that lead to positive impact. Asking for and utilizing input from users, providing more diverse and more meaningful E/PO activities for scientists, and forming partnerships between

audience members, scientists, and E/PO developers are among the positive steps that PERG cited.

A particularly important PERG finding was that a significant positive shift in the attitude of the space science community toward education had occurred. Contrary to the attitudes expressed when the program was just beginning, scientists now reported that they considered E/PO to be an important, albeit challenging, activity. This is a strong validation of the work that the Space Science E/PO Program has invested in making E/PO an expected part of every mission, and of the work that the Support Network (SN) has invested in encouraging scientists to become involved in E/PO and in helping them find ways to contribute more efficiently to space science education.

PERG also found evidence that NASA Space Science E/PO resources are reaching more diverse audiences, many of whom have been traditionally underserved by existing space science E/PO opportunities. This growing community of users is the result of efforts focused on reaching minority communities, students with disabilities, community-based groups, and minority universities.

PERG’s primary recommendation was that, in order to build upon the significant success and broad impacts found throughout the NASA Space Science E/PO program, information about the methodologies and lessons learned should be better disseminated throughout the E/PO community. In particular, PERG noted a need for more systematic and coherent dissemination of information throughout the Space Science E/PO community about user needs, existing resources, and current educational practices. Further guidance is also needed to help the E/PO practitioners better understand what constitutes success and how to measure and report it. These considerations form the basis for setting priorities for the planned improvements to the NASA Space Science E/PO program discussed in the next section.

"... genuine success ... will not be won through short-term activities with immediate results ... but rather through a long-term commitment requiring a sustained effort ..."

— Space Science Advisory Committee E/PO Task Force

SUMMARY AND FUTURE PLANS

The clear priority for FY 2004 is to improve the coherence of NASA space science materials for educators and product developers by building a space science curriculum framework. Such a framework will tell the story of space science "from origins to destiny," provide an appropriate standards-aligned sequencing of space science topics throughout the K-12 years, and link to recommended materials available for each point in the sequence. This will give educators coherent guidance as to what materials are available and how and when to use them, and it will give product developers guidance as to what new materials would be most useful to develop in order to improve and fill in the framework. During FY 2004, a leadership group established in FY 2003 will complete its task of conceptualizing in detail the design of the framework and forming a development team to begin work on building the framework itself.

With clear successes being reported by participants in the Minority University and College Education and Research Partnership Initiative (MUCERPI) in Space Science, attention will be given in FY 2004 to broadening the diversity of participants in NASA space science programs beyond the sphere of minority universities. In response to recommendations received from ongoing discussions with professional societies of minority scientists, an experimental workshop, "Chicago 2004", will be convened on June 28–29, 2004 at the Chicago Hilton. This workshop will bring together NASA personnel, current NASA-funded space scientists, and a diverse array of scientists who are interested in participating in future NASA space science missions and research programs. A specific goal of the workshop is to seed personal contacts among a much more diverse community of investigators than has traditionally been active in NASA space science missions. Hopefully, such contacts will lead to partnerships that will grow to become true collaborations as time goes on.

Opportunities for students and educators to engage in real research projects and to work with real data will continue to

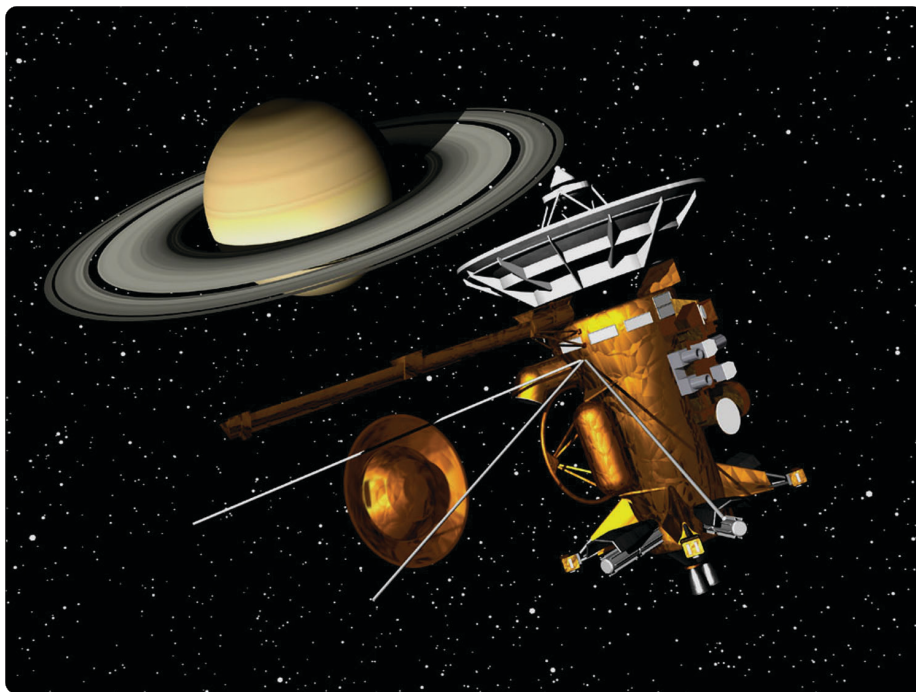


"Chicago 2004" will further extend opportunities for participation of minority scientists in space science missions.

expand as NASA space science missions, research facilities, and data centers devise new ways to provide such opportunities. For example, in conjunction with the January 2004 landings of the Mars Exploration Rovers (MERs), the Mars Public Engagement Program has created Mars Exploration Student Data Teams.

The Mars landings have been the highlight of NASA space science public outreach activities in FY 2004. Through the [Mars Visualization Alliance](#), more than a hundred science centers, museums, and planetariums have brought the excitement of the Mars landings and the subsequent science explorations to the public in near-real-time through special events held at each of their facilities. The Passport to Knowledge series has followed the progress of the Mars rovers through a series of special broadcasts for the education community and the general public. On January 17, "First Look" was broadcast live from the Houston Museum of Natural Science and NASA's Jet Propulsion Laboratory (JPL). Coming shortly after the January 3 landing of the first rover, "Spirit," the program focused on the initial science activities conducted by the rover. On May 1, "New Views from Mars"—an update on MER science activities—was broadcast from the St. Louis Science Center and JPL. These broadcasts, appearing on participating PBS stations and NASA-TV, were provided as a service to science centers, schools, and noncommercial media.

Later in FY 2004, Saturn will take center stage, with the Cassini-Huygens spacecraft arriving at Saturn and attempting to enter into an orbit around Saturn. For this event, the [Mars Visualization Alliance](#) will become a Saturn Alliance, giving the participating science centers, museums, and planetariums opportunities to hold special events to monitor and celebrate Cassini's orbital insertion, the subsequent scientific explorations of Saturn and its moons, and the unprecedented plunge of the Huygens Probe into the atmosphere of Saturn. The "[Ringworld](#)" planetarium show, for which distribution began late in FY 2003, will be a major feature at many of the participating planetariums during these major Cassini mission events.



In this artist's rendition, the Huygens probe is ejected by the Cassini spacecraft and begins its 22-day coast phase toward Titan. During the probe's descent through Titan's dense, murky atmosphere, the probe will beam data to the Cassini orbiter to be relayed back to Earth. (Credit: NASA Jet Propulsion Laboratory)

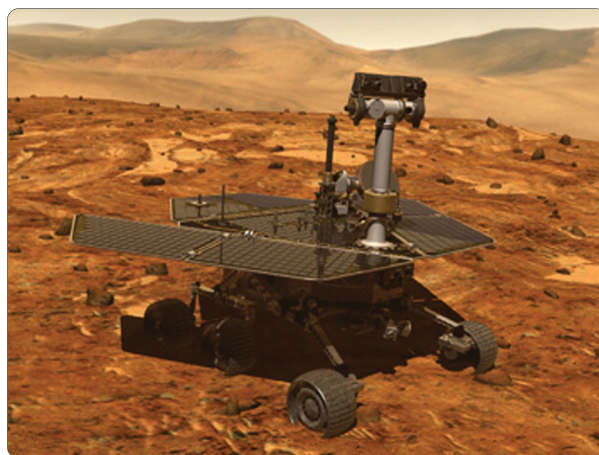
Major museum and science center exhibitions will continue to tell the space science story at venues throughout the country in FY 2004. The “Cosmic Questions” exhibition began FY 2004 at the Explorers Hall of the National Geographic Society in Washington, DC, which was followed by a stop at the Ontario Science Centre in Toronto, Canada. Version II of the “Hubble Space Telescope: New Views of the Universe” exhibition is visiting the Miami Museum of Science in Miami, FL; the Kalamazoo Aviation History Museum in Kalamazoo, MI; and the Arts and Industries Building of the Smithsonian Institution in Washington, DC. A newly renovated version of the “MarsQuest” exhibition, featuring the latest discoveries from missions, began its national tour in FY 2004 at the New Detroit Science Center in Detroit, MI. Joining “MarsQuest” on national tour in FY 2004 is new Mars exhibition, “Destination Mars”, which stops at the Sheila M. Clark Planetarium in Salt Lake City, UT; the Children's Museum of Durango in Durango, CO; and the Rocky Mount Children's Museum, Rocky Mount, NC.

An exceedingly rare celestial event, a transit of the Sun by the planet Venus, will occur in FY 2004. Starting at sunrise on June 8, 2004, Venus will be visible to properly prepared viewers as it moves across the face of the early morning sun. Information on safe viewing procedures, viewing locations, and times are available on the NASA Sun-Earth Connection Education Forum (SECEF) Web site at <http://sun-earth.gsfc.nasa.gov/sunearthday>. The Venus Transit will offer an opportunity to highlight the historical significance of such an event in making scientific observations that range from studying the atmosphere of Venus to determining the distance scale of the Universe. Resources available for students

and teachers will include a NASA/CONNECT TV program about how the transit of Venus set the scale of the Solar System; a Student Observation Network lab experiment on determining the distance from the Earth to the Sun using transit observations; and multi-curricular resources in science, math, history, literature, arts, and music. The entire transit will be Web cast by the Exploratorium from a site in Athens, Greece, and “Chasing Venus”—a special exhibition featuring materials and historical documents from past transits compiled by the Dibner Library of the Smithsonian Institution—will be on display at the National Museum of American History.

Other major activities anticipated for FY 2004 include developing E/PO program plans for major new initiatives such as Prometheus and Beyond Einstein, expanding relationships with community-based organizations such as the Girl Scouts of the USA, and investigating a variety of new potential partners for informal education and public outreach.

A coherent and sustained approach to providing professional development opportunities for the community of NASA space science E/PO providers will be initiated in FY 2004. Such professional development opportunities will be aimed at increasing the effectiveness of the many individuals who carry out E/PO activities for NASA space science missions



The Mars Rovers will provide exciting discoveries for many E/PO opportunities in 2004. (Credit: NASA Jet Propulsion Laboratory)



The transit of Venus will be the major Sun-Earth event of 2004.

and programs. Among the topics being considered for inclusion are training in standards and in the practical results from education research.

Evaluation will continue to be a major area of emphasis for OSS. The final report from Phase III of the PERG evaluation study is expected in FY 2004. Such evaluation reports have in the past proved to be extremely useful for guiding system-wide plans for continual improvement of the NASA Space Science E/PO program. Responding to recommendations from the anticipated PERG report and from the Space Science Advisory Committee's E/PO Task Force Report that was received previously will continue to be top priorities for FY 2004 and beyond.

The NASA Space Science E/PO program has now reached a new level of maturity. In prior years, the emphasis has been on establishing the program and finding out if the strategies upon which it is based are sound and productive ones. The evaluation reports now being received show that the strategies and implementation procedures are indeed sound. The emphasis in future years can therefore turn toward institutionalizing the program more firmly within the NASA Space Science Enterprise and developing ever broader collaborations throughout NASA and the external education community. The future for space science education is bright, and the Space Science Enterprise is pleased to be a major contributor to that future.

Appendices



APPENDIX A. Directory of Education and Public Outreach Products and Activities

This directory provides detailed information on each of the Space Science Education and Public Outreach (E/PO) program products and activities produced or carried out in FY 2003. (A list of mission/program acronyms is provided in appendix I.) The listings are grouped into categories as follows, according to the type of E/PO product or activity that they represent.

Science Center Shows/Exhibits:

- **Planetarium shows:** Planetarium shows developed or produced with direct NASA Space Science mission/program involvement.
- **Science center exhibits:** Exhibits developed with direct NASA Space Science mission/program involvement and installed in a science center or museum.
- **Materials/Support:** Materials or content supplied by NASA Space Science missions/programs for use as components of planetarium shows or museum exhibits.

Targeted Outreach:

- **Minority Institution Initiative in Space Science:** Projects that are part of the Minority University Education and Research Partnership Initiative in Space Science, a joint effort of the Office of Space Science (OSS) and the Office of Equal Opportunity Programs (OEOP).
- **University Research Centers:** Projects that are part of the OEOP University Research Centers Program that have significant involvement with NASA Space Science activities.
- **Other targeted activities:** Projects that provide substantial targeted outreach to underserved/underutilized groups.

Educational Products:

- E/PO products registered with the Space Science Education Resource Directory during FY 2003.

Educational Activities:

- **Classroom education:** Activities that are primarily targeted to improving formal education, following the subcategories below:
 - **Systemic improvement:** Activities that use NASA Space Science missions/programs to support local, State, regional, and national mathematics, science, engineering, and technology education change efforts through collaboration with internal and external stakeholders.
 - **Teacher preparation/enhancement:** Activities that use NASA Space Science missions, facilities, human resources, and programs to provide exposure and experiences to teachers and faculty to support the enhancement of knowledge and skills and to provide access to NASA information in science and mathematics.
 - **Curriculum development/dissemination:** Activities that develop, utilize, and disseminate science, mathematics, geography, and technology instructional materials based on NASA Space Science missions and results.
 - **Student support:** Activities that use the NASA Space Science missions, facilities, human resources, and programs to provide information, experiences, and research opportunities for students to support the enhancement of knowledge and skill in the areas of science, mathematics, engineering, and technology.
- **Public outreach:** Activities that are primarily targeted to improving the general public's understanding of science and technology.
- **Scientist involvement:** Activities that are primarily targeted to encouraging the participation of scientists in E/PO activities. Each listing contains some or all of the following detailed information:

Title:

Title of the product or activity.

Theme(s):

NASA Space Science Theme(s) on which the product or activity is focused:

ASO = Astronomical Search for Origins

SEC = Sun-Earth Connection

SEU = Structure and Evolution of the Universe

SSE = Solar System Exploration

Subject(s):

Subject area(s) that an E/PO product addresses (e.g., physical science, space science).

Format(s):

Format in which an E/PO product is produced (e.g., CD, pamphlet, Web site).

Audience:

Target audience for an E/PO product (e.g., grades K–12, general public).

Mission(s)/Program(s):

NASA Space Science mission(s) and program(s) that contributed to producing the product or conducting the activity. Further information on the overall E/PO activities of each mission or program can be found in appendix B. A listing of all missions and programs according to their acronyms, along with references to where they appear in this report, can be found in appendix I.

Description:

Narrative description of the product or activity.

Lead:

Person or organization with lead responsibility for the product or activity.

Contact:

Person or organization with contact responsibility for the product or activity.

Primary URL: Primary Web address for further information on the product or activity.

2nd URL: Secondary Web address for further information on the product or activity.

Scientist(s):

Office of Space Science (OSS)-affiliated scientists who participated in developing the product or conducting the activity.

Partner(s):

Institutions or organizations that are partners or collaborators in the product or activity.

Event(s):

Dates, location, and numbers of participants for each discrete event associated with an E/PO activity. For example, if the activity is a program of teacher workshops, then each individual workshop is an event. The numbers of participants are counted in three separate categories: direct participants (those whose name, school, or organization is known and who have interactions with the activity leader), anonymous participants (those whose name, school, or organization is not known or who do not have interactions with the activity leader), and Web audiences.

SCIENCE CENTER SHOWS/EXHIBITS

Planetarium Shows

A1. "By the Light of the Sun"

Theme(s): SEC, SSE

Msn/Prgm: Solar-B[B95]

Description: "By the Light of the Sun" is a planetarium show focused on our Solar System, featuring the Sun and its influence throughout. The current state of solar observation and solar physics is presented, featuring today's high-technology solar observatory satellite programs.

Lead: Mr. Ryan Diduck, Chabot Space and Science Center, Oakland, CA 94619. E-mail: rdiduck@chabot.space.org. Phone: 510-336-7340.

Contact: Mr. Benjamin Burress, Chabot Space and Science Center, Oakland, CA 94619. E-mail: bburress@chabot-space.org. Phone: 510-336-7308.

Scientist(s): Dr. Gibor Basri University of California, Berkeley

Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
Oct 02	30 Sep 03	Chabot Space and Science Center,	Oakland, CA	0	1,000	0

A2. HST Cycle E/PO Grant: Mice, Monsters and Other Celestial Beasts—A Space Safari

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: This informal science education project is designed to introduce a variety of audiences to basic astronomical concepts via a 'space safari'. The 'safari' will consist of a public planetarium show and related Web sites about 'celestial beasts'—the nebulae and galaxies in the sky that resemble animals. During this 'tour' of the Universe, the audience will learn about stellar evolution, birth, and death as well as be introduced to the electromagnetic spectrum. Past and future NASA astronomical missions will also be described.

Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu. Phone: 410-338-4798.

Scientist(s): Dr. Gary Henson East Tennessee State University Johnson City, TN
Dr. Beverly Smith East Tennessee State University Johnson City, TN

Partner(s): East Tennessee State University Johnson City, TN

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jun 99	31 May 02	East Tennessee State University	Johnson City, TN	0	50	0

A3. IDEAS Grant: "The Stargazer"

Theme(s): ASO

Msn/Prgm: IDEAS[B1]

Description: The program involved developing a distinctive planetarium show, "The Stargazer," aimed at nurturing greater public knowledge of the stars and our relationship to them. The goal was to produce an interactive planetarium show with sustained educational value. The program, which is targeted to middle and high school students, was developed by Dr. James Kaler, astronomy professor at the University of Illinois, and two planetarium professionals. Part of the show has an interactive component which involves basic activities that the audience can perform in their seat, such as a parallax demonstration. A "Stargazer" activity book and Web site further extends the project's reach after the show.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Primary URL: <http://www.astro.uiuc.edu/~kaler/sg.html>

Partner(s): Friends of Minneapolis Public Library Minneapolis, MN
University of Illinois at Urbana-Champaign Urbana, IL

A4. "Journey to the Edge of Space and Time" Planetarium Show

Theme(s): SEU

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: This dynamic show, produced by the Charles Hayden Planetarium, Boston, and the NASA-Smithsonian Structure and Evolution of the Universe (SEU) Forum, takes the audience on a journey to supermassive black holes, giant galaxy clusters, the Universe's earliest moments, and even to parallel universes that challenge the imagination. With the dawn of a new millennium, new instruments expand our vision of the cosmos. The pieces of a great cosmic puzzle are falling into place, promising answers to questions we once considered unanswerable: Is there an edge of space? Was there a beginning to time? Are there other universes beyond our own, waiting to be discovered? Find out more in "Journey to the Edge of Space and Time."

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Contact: Ms. Sandra Daly, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: sdaly@cfa.harvard.edu. Phone: 617-496-4784.

Scientist(s): Dr. Roy Gould Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Partner(s): Museum of Science Boston, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Sep 02	15 Apr 03	Museum of Science	Boston, MA	0	144,000	0
02 Feb 03	02 Sep 03	Delta College	Bay City, MI	0	8,000	0

A5. "MarsQuest" Planetarium Show

Theme(s): ASO, SSE

Msn/Prgrm: Solar System Exploration (SSE) Forum[B12], SSI B/F[B20], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40]

Description: The "MarsQuest" planetarium show is a National Science Foundation (NSF)-funded product produced by Loch Ness Productions in collaboration with the Space Science Institute (SSI) of Boulder, Colorado, and more than a dozen scientists and education experts. The "MarsQuest" planetarium show is a supplemental component of the "MarsQuest" traveling exhibition now touring the U.S.; planetariums at exhibit host sites receive the show free. The show is divided into three sections that present the viewer with the cultural, historical, and scientific aspects of Mars study and exploration. In the first section, "Homage," the show traces Mars through history. The second section, "Mars in Focus," details the Mars of our time, as seen in the night sky through binoculars and telescopes, and as discovered in our Mars explorations. Mission findings from Viking, Pathfinder, and Mars Global Surveyor feature reports on the weather, climate, and areology of Mars. The narrative compares the climate and terrain of Earth and Mars, and it presents the current thinking about the areologic history of the planet and a rationale for future exploration. "Mars in the Future" examines where on Earth people can prepare to live on Mars, what will be needed to get crewed missions there, and what the first landing may be like. The show ends with "Rhapsody on a Red Planet," a poetically styled "ode to Mars," this time from the perspective of a future Mars explorer tracing the efforts that led to the first human footsteps on the Red Planet. The show's opening was in Orlando, Florida, at the Dr. Phillips CineDome, where it ran in conjunction with SSI's "MarsQuest" exhibit at the Orlando Science Center. The program is still available; 45 facilities around the world have received the show since its release.

Lead: Ms. Carolyn Collins Petersen, Loch Ness Productions, Groton, MA 01450-3159. E-mail: carolyn@lochness.com. Phone: 978-448-3666.

Primary URL: <http://www.lochness.com>

2nd URL: <http://www.spacescience.org>

Partner(s): California Institute of Technology

European Space Agency

Lunar and Planetary Institute

Malin Space Science Systems

NASA Ames Research Center

NASA Jet Propulsion Laboratory

NASA Johnson Space Center

SETI Institute

Space Science Institute

Space Telescope Science Institute

U.S. Geological Survey

Pasadena, CA

Paris, France

Houston, TX

La Jolla, CA

Moffett Field, CA

Pasadena, CA

Houston, TX

Mountain View, CA

Boulder, CO

Baltimore, MD

Flagstaff, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 02	31 Aug 03	Heritage Planetarium	Maryville, TN	0	5,200	0
01 Oct 02	31 Aug 03	Angelo State University	San Angelo, TX	0	700	0
01 Oct 02	31 Aug 03	Hastings Museum of Natural and Cultural History	Hastings, NE	0	876	0
01 Oct 02	30 Sep 03	Eastern Kentucky University	Richmond, KY	0	2058	0
01 Oct 02	30 Sep 03	Omnisphere Theater	Columbus, GA	0	4578	0
01 Oct 02	30 Sep 03	Pensacola Junior College, Space and Science Theatre	Pensacola, FL	0	250	0
01 Oct 02	30 Sep 03	Science City at Union Station	Kansas City, MO	0	842	0
29 Oct 02	07 Jan 03	Lafayette Natural History Museum and Planetarium	Lafayette, LA	0	927	0
01 Nov 02	30 Nov 02	Ball State University	Muncie, IN	0	446	0
01 Jan 03	30 Jun 03	Orlando Science Center	Orlando, FL	0	680	0
01 Jan 03	30 Jun 03	Radford University	Radford, VA	0	435	0
01 Jan 03	30 Jun 03	Universe Theater and Planetarium	Kalamazoo, MI	0	500	0
01 Jan 03	30 Sep 03	West Virginia University	Morgantown, WV	0	1,480	0
26 Apr 03	31 Aug 03	Cumberland Science Museum	Nashville, TN	0	7,404	0
01 Jul 03	31 Jul 03	Roswell Museum and Art Center	Roswell, NM	0	362	0

01 Jul 03	31 Aug 03	Brevard Community College	Cocoa, FL	0	1162	0
01 Jul 03	31 Aug 03	Plymouth Community Intermediate School	Plymouth, MA	0	507	0
19 Jul 03	31 Aug 03	Omniplex Science and Arts Museum	Oklahoma City, OK	0	7847	0
01 Aug 03	30 Sep 03	Scobee Planetarium	San Antonio, TX	0	75	0
15 Aug 03	15 Aug 03	Arthur Storer Planetarium, Calvert County Public Schools	Prince Frederick, MD	0	59	0
15 Aug 03	31 Aug 03	St. Marks School of Texas	Dallas, TX	0	730	0
16 Aug 03	31 Aug 03	Flandrau Science Center	Tucson, AZ	0	234	0

A6. "Mysteries of the Milky Way" Planetarium Show

Theme(s): ASO, SEU

Msn/Prgm: NESSIE B/F[B18]

Description: "Mysteries of the Milky Way" presents our home galaxy from the inside out. Along the way, it considers new-found evidence for a torrential nucleus, an inner ring-bar structure, starbirth activity along spiral arms, and ponderous dark matter in the halo.

Lead: Ms. Robin Symonds, Museum of Science, Boston, MA 02114-1099. E-mail: nessie@mos.org. Phone: 617-589-0227.

Contact: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org>

2nd URL: <http://www.mos.org/nessie>

Scientist(s): Dr. William Waller Tufts University Medford, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jun 03	30 Sep 03	Museum of Science	Boston, MA	0	110,000	0

A7. "Northern Lights" Planetarium Show

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: In collaboration with NASA's Sun-Earth Connection (SEC) Education Forum, the Lawrence Hall of Science (LHS) has released "Northern Lights," a new addition to the audience participatory program series, "Planetarium Activities for Student Success (PASS)." The show uses images, video, and activities that demonstrate the connectivity between our Sun and Earth. Since its release in the early summer of 2002, it has been distributed to more than 100 institutions nationwide that requested a kit. The show, tailored to small-dome planetariums, engages participants in exploring the beauty and causes of auroras. In addition, participants interactively learn about seasons, sunrise, and sunset. Scientific expertise and multimedia resources, in the form of images and videos with NASA data, were provided by several satellite missions. Other program elements include recent scientific views on the causes of auroras, including images and movie clips of the Sun, granules, coronal holes in ultraviolet light, and coronal mass ejections. The "Northern Lights" kit includes a guide with the script, scientific background information, classroom activities, a video or DVD, and a slide set. The "Northern Lights" kit is being distributed along with every STARLAB inflatable planetarium sold. The following are typical comments from some of the recipients thus far: "We will make this program available for school groups as one of our school offerings. Our annual attendance is roughly 38,000 patrons, half of which are school children"; "This program will be used for both school and public groups. We average around 200-300 students a day during the springtime, and about half that number during the winter. [Our] Planetarium services many of the students from the Detroit Public Schools, with a high percentage of these students being from historically underserved minorities."

Lead: Mr. Alan Gould, Lawrence Hall of Science, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.

Contact: Dr. Isabel Hawkins, University of California, Berkeley, Berkeley, CA 94720. E-mail: isabelh@ssl.berkeley.edu. Phone: 510-643-5662.

Primary URL: <http://lawrencehallofscience.org/pass>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Jun 03	Delta College	Bay City, MI	352	130	0
01 Oct 02	30 Jun 03	E. P. Hubble Planetarium	Brooklyn, NY	224	20	0

01 Oct 02	30 Jun 03	Independence Planetarium	San Jose, CA	155	0	0
01 Oct 02	30 Jun 03	Los Angeles Valley College	Valley Glen, CA	400	0	0
01 Oct 02	30 Jun 03	The Sage Colleges	Albany, NY	160	100	0
01 Oct 02	30 Sep 03	Charles Horwitz Planetarium	Waukesha, WI	0	120	0
06 Jan 03	02 May 03	Weber State University	Ogden, UT	260	3,000	0

A8. "Stars of the Pharaohs" Planetarium Show

Msn/Prgm: NESSIE B/F[B18]

Description: "Stars of the Pharaohs" highlights the night sky as it would have been observed by the ancient Egyptians. The role of astronomical observations in driving the mathematical, technological, and cultural progress of ancient Egypt is presented. Modern interpretations of the observed phenomenology are included along with the ancient myths.

Contact: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org>

2nd URL: <http://www.mos.org/nessie>

Scientist(s): Dr. Owen Gingerich Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Nov 02	15 Mar 03	Museum of Science	Boston, MA	0	111,000	0

Science Center Exhibits

A9. "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], CXO[B65], GLAST[B68], GP-B[B69], CHIPS[B72], SPIDR[B76], Swift Gamma Ray Burst Mission[B78], WMAP[B79], HEASARC[B81], COBE[B82], HETE-2[B83], XMM-Newton[B86]

Description: "Cosmic Questions" is a 5,000-square-foot traveling exhibition for science centers and museums, which invites audiences to explore fundamental questions and recent discoveries about the origin, evolution, and structure of the Universe. Among other activities, this highly interactive exhibition offers visitors a chance to go beyond the visible and observe what the Universe would look like if they could see infrared light or x rays, journey to a black hole and study it from a virtual orbiting observatory, discover what it's like to be an astronomer, make the acquaintance of observers on a Hawaiian mountaintop or a team launching a great observatory into space, and program a remote telescope to take a picture of a selected object. "Cosmic Questions" was made possible by generous support from the National Science Foundation and from the NASA Office of Space Science (OSS) Universe Education Forum at the Harvard-Smithsonian Center for Astrophysics (CfA). The exhibition is touring nationally under the management of the Association for Science-Technology Centers. Dozens of scientists from the CfA and from other institutions around the world contributed to "Cosmic Questions" and its accompanying programs.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Scientist(s):	Dr. Kenneth Brecher	Boston University	Boston, MA
	Dr. Roger Brissenden	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Sandra Castro	California Institute of Technology	Pasadena, CA
	Dr. Peter Challis	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Lynn Cominsky	Sonoma State University	Rohnert Park, CA
	Dr. Andrea Dupree	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Emilio Falco	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Owen Gingerich	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Bruce Gregory	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Robert Kirshner	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Rocky Kolb	Fermi National Accelerator Laboratory	Batavia, IL
	Mr. Anthony Lavoie	NASA Marshall Space Flight Center	Huntsville, AL
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD

Partner(s):	Dr. Peter Michaud	Gemini Observatory	Hilo, HI
	Dr. Jennifer Mullins	Stanford University	Stanford, CA
	Dr. Stephen Murray	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. E. Samuel Palmer	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. David Spergel	Princeton University	Princeton, NJ
	Dr. Harvey Tananbaum	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Jeff Kennedy Associates, Inc.		Somerville, MA
	Leslie University		Cambridge, MA
Event(s):	Museum of Science		Boston, MA
	National Science Foundation,		Arlington, VA
	Superior Exhibits and Design, Inc.		Elk Grove Village, IL

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	05 Jan 03	Museum of Science	Boston, MA	0	300,000	0
02 Feb 03	02 Sep 03	Midland Center for the Arts	Midland, MI	11149	14,285	0

A10. Current Science and Technology Center

Theme(s):	ASO, SEC, SEU, SSE					
Msn/Prgm:	NESSIE B/F[B18]					
Description:	The Current Science and Activity Center (CS and T) at the Museum of Science, Boston provides regular presentations and web updates on space science topics in the news. They also provide coaching and a venue for space scientists interested in giving public presentations on their research. These various presentations are sometimes used by print, radio, and television news organizations. CS and T staff also assist in after-school programs in partnership with space science organizations in the Boston/Cambridge area.					
Lead:	Ms. Tania Ruiz, Museum of Science, Boston, MA 02114-1099. E-mail: truiz@mos.org . Phone: 617-589-0402.					
Contact:	Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org . Phone: 617-589-0227.					
Primary URL:	http://www.mos.org/cst					
2nd URL:	http://www.mos.org/nessie					
Scientist(s):	Ms. Tania Ruiz	Museum of Science	Boston, MA			

Event(s):		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	Museum of Science	Boston, MA	0	1,022,000	0

A11. HST Cycle E/PO Grant: Exhibit of HST Images and Space Hardware

Theme(s):	ASO					
Msn/Prgm:	HST[B22]					
Description:	The project consists of constructing an inspirational and educational exhibit of images taken with HST to be displayed publicly at the Fiske Planetarium on the University of Colorado campus, in collaboration with Ball Aerospace Corporation, NASA's Goddard Space Flight Center, and the Space Telescope Science Institute. Fiske is the largest star theatre between Chicago and Los Angeles; the facility is visited by 20,000 school children and 10,000 general public annually. The proposed HST exhibit will include: over four dozen HST images, several dramatic, large-format backlit images, space hardware flown on HST (supplied by Ball Aerospace Corp.), a photo-history of the making of HST (in collaboration with Ball), interpretive guides at primary, middle and high school levels for self-guided tours of the exhibit and educational videos and Space Telescope downloads describing recent HST discoveries. This project will be cost-shared between CASA/APS Department and Fiske Planetarium, Ball Aerospace Corp., the University of Colorado Outreach Council and E/PO grant funds.					
Lead:	Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu . Phone: 410-338-4798.					
Partner(s):	Ball Aerospace Technologies Corporation	Boulder, CO				
	Fiske Planetarium	Boulder, CO				
	University of Colorado, Boulder	Boulder, CO				

A12. "Hubble Space Telescope: New Views of the Universe" (Version 2)

Theme(s): ASO, SEU

Msn/Prgm: HST[B22]

Description: Featuring the best of Hubble's beautiful images, "Hubble Space Telescope: New Views of the Universe II" shows visitors how this suite of scientific instruments is challenging widely held assumptions about the cosmos. The exhibition explores the Hubble Space Telescope and its history, purpose, anatomy, and operation, immersing visitors in the magnificence and mystery of its mission. Visitors enter the exhibition through a tunnel lined with monitors that project images taken by Hubble. Four freestanding structures are devoted to Hubble's contributions to the exploration of planets, stars, galaxies, and the universe. A scale model of Hubble is complemented by "satellite" units that incorporate hands-on activities about how the telescope works. The exhibition was organized by the Smithsonian Institution Traveling Exhibition Service (SITES) and the Space Telescope Science Institute.

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: http://www.sites.si.edu/exhibitions/exhibit_main.asp?id=57

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Oct 02	05 Jan 03	Virginia Air and Space Museum	Hampton, VA	0	0	0
01 Feb 03	11 May 03	Kirby Science Discovery Center	Sioux Falls, SD	0	0	0
14 Jun 03	24 Aug 03	U.S. Space and Rocket Center	Huntsville, AL	0	0	0
20 Sep 03	06 Jan 04	Miami Museum of Science	Miami, FL	0	0	0

A13. Hubble Space Telescope: "ViewSpace" CD Distribution

Theme(s): ASO, SEU, SSE

Msn/Prgm: HST[B22]

Description: "ViewSpace" is a series of multimedia presentations with high-resolution images, digital video clips, interpretive text, and evocative space music that provides planetariums and science museums with an affordable and engaging presentation of space-based astronomy for public audiences. Currently focused on science from the Hubble Space Telescope, "ViewSpace" will soon be expanding its coverage to include science from other exciting NASA space science missions. The "ViewSpace" presentation CD is produced by the Space Telescope Science Institute (STScI), Baltimore, Maryland, with updates provided quarterly. The presentation requires a Windows PC and large-screen digital display device. "ViewSpace" has been demonstrated at several major conferences and acclaimed by science centers and planetariums. Over 100 institutions are currently using "ViewSpace", with additional users expected in the coming year.

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: <http://informal-sci.stsci.edu/index.html>

Scientist(s): Mr. John Stoke Space Telescope Science Institute

Partner(s):	Abrams Planetarium	Baltimore, MD
	Bakersfield College	East Lansing, MI
	Ball State University	Bakersfield, CA
	Benedum Planetarium	Muncie, IN
	Brazosport Nature Center and Planetarium	Wheeling, WV
	Brish Planetarium	Clute, TX
	Buehler Challenger and Science Center	Hagerstown, MD
	Calgary Science Centre	Paramus, NJ
	Chabot Space and Science Center	Calgary, Canada
	Challenger Learning Center	Oakland, CA
	Challenger Learning Center	Brownsburg, IN
	Challenger Learning Center	Kansas City, MO
	Children's Museum	Radcliff, KY
	City of Wichita Department of Parks and Recreation	Indianapolis, IN
	Colonial Middle School	Wichita, KS
	Colorado Rural Schools	Plymouth Meeting, PA
		Lake City, CO

Community College of Southern Nevada	North Las Vegas, NV
DeAnza College	Cupertino, CA
East Kentucky Science Center	Prestonsburg, KY
Edgewood Middle School	Edgewood, MD
Edward Zane Planetarium/The Natural Science Center	Greensboro, NC
Evansville Museum of Arts, History, and Science	Evansville, IN
Fernbank Science Center	Atlanta, GA
Flour Bluff High School	Corpus Christi, TX
Framingham State College	Framingham, MA
Garland Independent School District	Garland, TX
Gene Roddenberry Planetarium	El Paso, TX
Half Hollow Hills Planetarium	Dix Hills, NY
Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
Hickory Environmental Education Center	Accident, MD
Iziko Museums of Cape Town	Cape Town, South Africa
Kansas Cosmosphere and Space Center	Hutchinson, KS
Katsushika City Museum	Tokyo, Japan
King High School	Corpus Christi, TX
Lake Afton Public Observatory	Goddard, KS
Lambuth University	Jackson, TN
Land Between the Lakes Association	Golden Pond, KY
Los Angeles Valley College	Valley Glen, CA
Maryvale Middle School	Checktowaga, NY
Maynard F. Jordan Planetarium	Orono, ME
Methacton School District	Norristown, PA
Midland Center for the Arts	Midland, MI
Morelia Planetarium	Michoacan, Mexico
Museo de la Ciencia y el Cosmos,	La Laguna-Tenerife Spain
Museum of Science and History	Jacksonville, FL
NASA Aerospace Education Services Program	Port Orchard, WA
NASA Goddard Space Flight Center	Greenbelt, MD
Natick High School	Natick, MA
North Carolina Museum of Natural Sciences	Raleigh, NC
Northern Michigan University	Marquette, MI
Ocean County College	Toms River, NJ
Paulucci Space Theater	Hibbing, MN
Pierce Middle School	Merrillville, IN
Pioneer Ridge Science Education Center	Independence, MO
Plainedge Planetarium	N. Massapequa, NY
Planetarium Lanka	Etul-Kotte, Sri Lanka
Planetarium Luzern	Luzern, Switzerland
Plymouth Community Intermediate School	Plymouth, MA
Reuben H. Fleet Science Center	San Diego, CA
Rio De Janeiro Planetarium	Rio De Janeiro, Brazil
Roberson Museum and Science Center	Binghamton, NY
Rochester Museum and Science Center	Rochester, NY
Samford University	Birmingham, AL
Sayville Planetarium	Sayville, NY
SciWorks	Winston-Salem, NC
Seneca Valley School District	Harmony, PA
Silicon Graphics, Inc.	Mountain View, CA
Snohanish County Airport	Everett, WA
Solar Wind	Ontario, Canada
South Florida Museum and Bishop Planetarium	Bradenton, FL
St. Mark's School	Southboro, MA

St. Marks School of Texas
 St. Petersburg College
 Stardust Planetarium
 Suffolk County Community College
 Suffolk County Community College
 Tampereen Sarkanniemi Ltd.
 Tarleton State University
 The New Detroit Science Center
 Thomas Jefferson High School
 U.S. Air Force Academy
 Universidad Complutense
 University College Cork,
 University of North Texas
 University of Rhode Island
 University of South Australia

University of Southern Maine
 Vanderbilt Museum
 Villanova University
 Virginia Living Museum
 Wauwatosa West High School
 Western Sky Planetarium
 Westlake Schools Planetarium
 Wheaton College

Dallas, TX
 St. Petersburg, FL
 Crompond, NY
 Selden, NY
 Miller Place, NY
 Tampere, Finland
 Stephenville, TX
 Detroit, MI
 Alexandria, VA
 Colorado Springs, CO
 Madrid, Spain
 Cork, Ireland
 Benbrook, TX
 Narragansett, RI
 Manson Lakes,
 Australia
 Portland, ME
 Centerport, NY
 Villanova, PA
 Newport News, VA
 Wauwatosa, WI
 Fruita, CO
 Westlake, OH
 Norton, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Jun 03	30 Sep 03	Mueller Planetarium	Lincoln, NE	0	10,000	0
15 Jun 03	30 Sep 03	Science Center of Connecticut	West Hartford, CT	0	10,000	0

A14. Hubble Space Telescope: "ViewSpace" Internet Distribution

Theme(s): ASO, SEU, SSE

Msn/Prgm: HST[B22]

Description: "ViewSpace" is a series of multimedia presentations that utilizes high-resolution images, digital video clips, interpretive text, and evocative space music to provide planetariums and science museums with an affordable and engaging presentation of space-based astronomy for public audiences. Currently focused on science from the Hubble Space Telescope, "ViewSpace" will soon be expanding its coverage to include exciting science from other NASA space science missions. An internet version of "ViewSpace" provided by the Space telescope Science Institute (STSci), Baltimore, MD, will enable a "ViewSpace" theater to display the latest news and images from Hubble (and other missions) as new information is released. "ViewSpace" has been demonstrated to science center and planetarium representatives at the ASTC, IPS, MAPS, and Challenger Center conferences, and has been greeted with acclaim. Over 100 institutions are currently using "ViewSpace" in their facilities, with more users expected to sign on during the coming year. In addition to the enhanced timeliness, the internet version offers expanded programming in the form of 100 news updates from around the NASA/OSS mission world. The most recent was the August 27, 2003 Mars Closest Approach news update which was posted to the participants

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: <http://informal-sci.stsci.edu/index.html>

Partner(s): Bishop Museum
 Brazosport Nature Center and Planetarium
 Clark Planetarium
 Cleveland Museum of Natural History
 Fleischmann Planetarium
 Gene Roddenberry Planetarium
 Houston Museum of Natural Science
 Lambuth University Planetarium

Honolulu, HI
 Clute, TX
 Salt Lake City, UT
 Cleveland, OH
 Reno, NV
 El Paso, TX
 Houston, TX
 Jackson, TN

Longway Planetarium	Flint, MI
Louisiana Arts and Science Museum	Baton Rouge, LA
Memphis Pink Palace Museum	Memphis, TN
Merrillville Community Planetarium	Merrillville, IN
Museum of Science	Boston, MA
North Museum of Natural History and Science	Lancaster, PA
U.S. Space and Rocket Center	Huntsville, AL
Virginia Living Museum	Newport News, VA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Jun 03	30 Sep 03	Bishop Museum	Honolulu, HI	0	10,000	0
15 Jun 03	30 Sep 03	Brazosport Nature Center and Planetarium	Clute, TX	0	5,000	0
15 Jun 03	30 Sep 03	Clark Planetarium	Salt Lake City, UT	0	10,000	0
15 Jun 03	30 Sep 03	Fleischmann Planetarium	Reno, NV	0	5,000	0
15 Jun 03	30 Sep 03	Longway Planetarium	Flint, MI	0	10,000	0
15 Jun 03	30 Sep 03	Louisiana Arts and Science Museum	Baton Rouge, LA	0	10,000	0
15 Jun 03	30 Sep 03	Memphis Pink Palace Museum	Memphis, TN	0	5,000	0
15 Jun 03	30 Sep 03	Museum of Science	Boston, MA	0	10,000	0
15 Jun 03	30 Sep 03	U.S. Space and Rocket Center	Huntsville, AL	0	20,000	0

A15. "Introducing the Heliosphere: From the Kitchen Sink to the Edge of the Solar Wind"

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: The goal of the exhibit is to inform the public of the formation and effects of the heliosphere in which we all live. The exhibition, to be housed in the Flandau Science Center in Tucson, will include three parts: (1) projection of the solar disk on a table to show sun spots, (2) a "kitchen sink" model of the termination shock and heliopause with flows adjustable by the visitor, and (3) a monitor with links to other relevant sites. Posters with graphics accompany the exhibits. The level of explanation is aimed at school children. A more detailed description of the heliosphere and its effects on Earth will be available on a Web site and in brochures for the general public.

Lead: Dr. Ke Chiang Hsieh, University of Arizona, Tucson, AZ 85721. E-mail: hsieh@physics.arizona.edu. Phone: 520-621-6772.

Scientist(s): Dr. Ke Chiang Hsieh University of Arizona Tucson, AZ

Partner(s): Flandrau Science Center Tucson, AZ

A16. "Mars in the Southwest"—A Teaching Exhibit for Schoolchildren and the General Public

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: "Mars in the Southwest" is an interactive exhibit at the Pima Air and Space Museum (PASM) Challenger Learning Center in Tucson, AZ. The exhibit is designed to inspire both children and adults through a presentation of the latest discoveries from the Mars Pathfinder, Global Surveyor, and Mars Odyssey missions. PASM has over 200,000 visitors annually; an estimated 16,000 students and teachers have visited "Mars in the Southwest." PASM has also produced classroom materials related to the exhibit, as well as a Mars science lecture series and Mars resources Web site.

Lead: Mr. Peter Smith, University of Arizona, Tucson, AZ 85721. E-mail: psmith@lpl.arizona.edu. Phone: 520-621-2725.

Contact: Ms. Mary Williams, University of Arizona, Tucson, AZ 85721. E-mail: maryw@lpl.arizona.edu. Phone: 520-621-2003.

Scientist(s): Dr. Peter Smith University of Arizona Tucson, AZ

Partner(s): Pima Air and Space Museum Tucson, AZ

A17. "MarsQuest" Traveling Exhibit

Theme(s): SSE

Msn/Prgm: SSI B/F[B20], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], MGS[B43], Mars Express[B63]

Description: The "MarsQuest" project is a 4,500-square-foot, \$3 million, traveling exhibition that will enable millions of Americans to share in the excitement of the scientific exploration of Mars and learn more about their own

planet in the process. The exhibit began a nine-city, 3-year tour in October 2000. "MarsQuest" is organized around three intriguing locations on Mars: (1) Olympus Mons, the largest volcano in the Solar System; (2) Valles Marineris, a canyon as long as the United States is wide; and (3) Ares Vallis, the Pathfinder landing site. Comparisons between Mars and Earth are provided for each area, giving visitors a real sense of the Martian environment. "MarsQuest" visitors encounter more than 20 interactive experiences, 4 life-size models, and dramatic artwork of Martian landscapes. Visitors can maneuver a rover over a simulated Martian landscape or participate in many other engaging hands-on activities. "MarsQuest" also includes a 30-minute planetarium show from Loch Ness Productions narrated by actor Patrick Stewart, best known as Captain Picard of the TV program "Star Trek: The Next Generation." The MarsQuest Education Program facilitates onsite workshops for museum staff and teachers that empower them to use the "MarsQuest" exhibit to share the thrill of scientific discovery with students and the public. Over 20 scientists have participated in the design, development, and implementation of the "MarsQuest" project. The Space Science Institute led the development of the "MarsQuest" exhibition with major funding from the National Science Foundation and NASA. Additional support was provided by Mitsubishi Digital Electronics America, Inc.; Hewlett-Packard Company; and CBS.

Lead: Ms. Lisa Curtis, Space Science Institute, Boulder, CO 80301. E-mail: curtisl@colorado.edu. Phone: 720-974-5821.

Primary URL: <http://www.spacescience.org>

2nd URL: <http://www.astc.org/exhibitions/mars/dmars.htm>

Scientist(s):	Dr. Nadine Barlow	University of Central Florida	Orlando, FL
	Dr. Jim Bell	Cornell University	Ithaca, NY
	Dr. Michael Carr	U.S. Geological Survey	Flagstaff, AZ
	Dr. Todd Clancy	Space Science Institute	Boulder, CO
	Dr. Ben Clark	Lockheed Martin Space Systems	Littleton, CO
	Dr. Robert Craddock	Smithsonian National Air and Space Museum	Washington, DC
	Dr. Paul Dusenbery	Space Science Institute	Boulder, CO
	Dr. Ken Edgett	Malin Space Science Systems	La Jolla, CA
	Dr. Robert Haberle	NASA Ames Research Center	Moffett Field, CA
	Dr. William Ingino	University of Colorado, Boulder	Boulder, CO
	Dr. Bruce Jakosky	University of Colorado, Boulder	Boulder, CO
	Dr. Philip James	University of Toledo	Toledo, OH
	Dr. Steve Lee	University of Colorado, Boulder	Boulder, CO
	Dr. Mike Malin	Malin Space Science Systems	La Jolla, CA
	Dr. Greg Neumann	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. David Sherrod	U.S. Geological Survey	Hawaii National Park, HI

Partner(s):	Dr. Peter Thomas	Cornell University	Ithaca, NY
	Dr. Mary Urquhart	NASA Ames Research Center	Moffett Field, CA
	Ms. Adrienne Wasserman	U.S. Geological Survey	Flagstaff, AZ
	Association of Science-Technology Centers		Washington, DC
	Jeff Kennedy Associates, Inc.		Somerville, MA
	Mystic Scenic Studios		Dedham, MA
	Randi Korn and Associates, Inc.		Alexandria, VA
	University of Colorado, Boulder		Boulder, CO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	31 Dec 02	Lafayette Natural History Museum and Planetarium	Lafayette, LA	0	36,000	0
01 Feb 03	30 Apr 03	Liberty Science Center	Jersey City, NJ	0	87,000	0
01 Jun 03	31 Aug 03	Boonshoft Museum of Discovery	Dayton, OH	0	65,000	0

A18. Patterns, Cycles, and Change: The Dynamic Interstellar Medium

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: The Astronomy Department at the University of Virginia and the Virginia Discovery Museum are developing a series of exhibits on the nature and dynamics of gas and dust between the stars. Specifically, the exhibit will introduce visitors to the many forms of the interstellar medium and its role in the formation of stars, planets,

and even life. The unifying theme of the exhibits will be that patterns, cycles, and change are an integral part of all natural systems. We will draw comparisons with other science concepts that visitors are familiar with, such as the water cycle on Earth, to reinforce the idea that cycles and changes are a part of nature.

Lead: Dr. Edward Murphy, University of Virginia, Charlottesville, VA 22903. E-mail: emm8x@virginia.edu. Phone: 434-924-4890.

Scientist(s):	Dr. Edward Murphy	University of Virginia	Charlottesville, VA
	Dr. Robert O'Connell	University of Virginia	Charlottesville, VA
	Dr. Richard Patterson	University of Virginia	Charlottesville, VA

Partner(s):	Virginia Discovery Museum	Charlottesville, VA
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Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Aug 03	30 Sep 03	University of Virginia	Charlottesville, VA	0	0	0

A19. "Space Weather Center" Traveling Exhibit

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], SSI B/F[B20], IS[B87], SP[B88], STP[B91], ACE[B98], IMAGE[B100], RHESSI[B102], SOHO[B112]

Description: This 700-square-foot exhibit shows viewers how space weather, (i.e. disturbances in space driven by solar activity), affects life on Earth. The exhibit includes engaging interactive displays, stunning graphics, and near-real-time data from current NASA missions to study the Sun and near-Earth space environment. Visitors to the Space Weather Center can learn about solar cycles (e.g. solar maximum), electrical and magnetic changes in space that affect people and equipment; the aurora, the greatest light show on Earth; and recent space weather discoveries by leading scientists. The exhibit, which debuted at the Denver Museum of Natural History in March 2000, has been supplemented by outreach events involving scientists and educators. The events included teacher workshops, hands-on science activities, solar observing, and planetarium shows. For example, the Space Science Institute (SSI) collaborated with the NASA's Sun-Earth Connection (SEC) Education Forum, the National Optical Astronomy Observatory in Tucson, AZ, Coronado Filters, and the National Radio Astronomy Observatory to plan and implement educational programming during the exhibit's Fall 2002 stay at the Kitt Peak Observatory. The Space Weather Center exhibit was developed through a partnership between SSI, NASA Goddard Space Flight Center, Sun-Earth Connection missions, and the NASA OSS SEC Education Forum.

Lead: Dr. Paul Dusenbery, Space Science Institute, Boulder, CO 80301. E-mail: dusenbery@colorado.edu. Phone: 720-974-5822.

Primary URL: <http://www.spacescience.org/SWOP/1.html>

Scientist(s):	Dr. Carol Jo Crannell	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Robert Hoffman	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Ramon Lopez	University of Texas at El Paso	El Paso, TX
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Donald Michels	Naval Research Laboratory	Washington, DC
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD

Partner(s):	Condit Exhibits	Denver, CO
	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	NASA Goddard Space Flight Center	Greenbelt, MD
	National Optical Astronomy Observatory	Tucson, AZ
	National Radio Astronomy Observatory	Socorro, NM

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	31 Dec 02	National Optical Astronomy Observatory	Tucson, AZ	0	10,000	0
01 Feb 03	30 Apr 03	Museum of Natural History	Providence, RI	0	10,000	0
01 Jun 03	31 Aug 03	Challenger Learning Center	Peoria, AZ	0	10,000	0

A20. Sun-Earth-Moon System Exhibit at University of Wyoming Planetarium

Theme(s): SEC, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: The Sun-Earth-Moon System Exhibit was developed in October 2002 and is now being displayed outside the University of Wyoming Physics and Astronomy Department Planetarium. It is an integral part of the Planetarium's K-12 teacher/student education program and also reaches the college student/teacher and general public traffic passing by.

Lead: Dr. Kathleen Harper, Wyoming Space Grant Consortium, Laramie, WY 82071-3905. E-mail: KDug@uwyo.edu. Phone: 307-766-2862.

Primary URL: <http://wyomingspacegrant.uwyo.edu/planetarium.htm>2nd URL: <http://wyomingspacegrant.uwyo.edu/s2n2.htm>

Partner(s): NASA Office of Education

Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Oct 02	30 Sep 03	University of Wyoming	Laramie, WY	0	4820	0

A21. Traveling Meteorite Display in Wyoming Libraries

Theme(s): SSE

Msn/Prgm: S2N2 B/F[B21]

Description: This traveling meteorite display is designed to educate the Wyoming general public in both rural and urban areas about meteorites and space science, as well as make space science education tools available for public viewing. Topics include meteorite classification, meteorite impact frequency, meteorite impact localities in the world and western United States, how to hunt for and identify meteorites, meteorite mythology, and the economic importance of meteorites. This display will travel throughout rural and urban Wyoming public libraries and museums over several years, spending about one month in each library or museum.

Lead: Dr. Kathleen Harper, Wyoming Space Grant Consortium, Laramie, WY 82071-3905. E-mail: KDug@uwyo.edu. Phone: 307-766-2862.

Primary URL: <http://wyomingspacegrant.uwyo.edu>2nd URL: <http://wyomingspacegrant.uwyo.edu/meteorite.htm#schedule>

Partner(s): NASA Office of Education

Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Sep 02	21 Oct 02	Converse County Library	Douglas, WY	0	2285	0
18 Nov 02	16 Dec 02	Sweetwater County Library	Green River, WY	0	1020	0
05 Jan 03	31 Jan 03	White Mountain Library	Rock Springs, WY	0	1060	0
05 Feb 03	05 Mar 03	Greybull Branch Library	Greybull, WY	0	50	0
05 Mar 03	31 Mar 03	Crook County Library	Sundance, WY	0	75	0
02 Apr 03	28 Apr 03	Lincoln County Library	Kemmerer, WY	0	200	0
30 Apr 03	26 May 03	Sheridan County Fulmar Public Library	Sheridan, WY	0	130	0
28 May 03	23 Jun 03	Riverton Branch Library	Riverton, WY	0	4198	0
25 Jun 03	21 Jul 03	Cokeville Branch Library	Cokeville, WY	0	620	0
23 Jul 03	18 Aug 03	Big Piney Branch Library	Big Piney, WY	0	30	0
20 Aug 03	15 Sep 03	Teton County Library	Jackson, WY	0	756	0
17 Sep 03	13 Oct 03	Glenrock Branch Library	Glenrock, WY	0	30	0

Materials/Support**A22. Astrobiology and Life Detection Institute for Informal Educators**

Theme(s): ASO

Msn/Prgm: SRT[B3]

Description: The Astrobiology and Life Detection Institute will address the search for life in our Universe and the technologies scientists employ. The Institute responds to a need in the informal education community for staff training, as identified in a 1999 study by the Denver Museum of Nature and Science and NASA Jet Propulsion Laboratory. Scientists and technologists will clarify the science of astrobiology and life detection, providing

participants with the knowledge and tools to address the public's misconceptions about extraterrestrial life. The Institute will be designed as a week-long experience for 20 museum educators, proposed for the September timeframe. Each participant will develop an action plan that will incorporate astrobiology and life detection into programs in their institution.

Lead: Ms. Marguerite Syvertson, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: mls@jpl.nasa.gov. Phone: 818-354-6492.

Scientist(s): Dr. Jay Nadeau NASA Jet Propulsion Laboratory Pasadena, CA

Partner(s): Science Museum of Minnesota, St. Paul, MN

A23. Auroral Structure and Dynamics

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: "Dynamic Aurora" is a 50-minute lecture and multimedia demonstration on the Northern Lights, hosted by the University of Alaska Museum in collaboration with the Geophysical Institute. "The Energetic Aurora" is a hands-on science kit developed for middle and high schools in rural and urban Alaska. Both these programs and the Museum's docent program will be redeveloped in time for the opening of the Museum's expansion in 2005. The expansion includes a new 130-seat, theatre-style auditorium and a 30-seat exploration classroom. This redevelopment will take advantage of a more technical presentation space, an increased emphasis on research, and a closer relationship between the Museum and Alaska Native Organizations. The associated LWS science proposal studies and models small-scale auroral structures. The science in this research effort is well-suited to contribute to the redevelopment of the Museum's projects. During the first year of this project we have developed visualization software that takes the simulation output and produces an auroral image from it as an observer on the ground, airplane, or satellite would see it. We plan to develop this visualization into an interactive museum display.

Lead: Dr. Dirk Lummerzheim, University of Alaska, Fairbanks, Fairbanks, AK 99775. E-mail: lumm@gi.alaska.edu. Phone: 907-474-7564.

Scientist(s): Dr. Dirk Lummerzheim University of Alaska, Fairbanks Fairbanks, AK

A24. "Hotter Than Blue: False Color Images from the Universe"

Theme(s): ASO, SEU

Msn/Prgm: SRT[B3]

Description: Survey responses are being used to craft a planetarium program on high-energy astrophysics, which will incorporate data from an all-sky imaging survey of hard x-ray and soft gamma-ray sources. The surveys were randomly distributed to attendees of planetarium programs at the Fernbank Science Center (Atlanta, GA) and the Shafran Planetarium (Cleveland, OH) and analyzed by Dr. Debbie Treise of the University of Florida's School of Journalism and Communication. In addition to targeting black holes, the primary interest of survey respondents, the program will showcase images and animations derived from the Chandra X-ray Telescope and will include an animation of all-sky maps of hard x-ray/soft gamma-ray sources.

Lead: Dr. Colleen Wilson-Hodge, NASA Marshall Space Flight Center, Marshall Space Flight Center, AL 35812. E-mail: colleen.wilson@nasa.gov. Phone: 256-961-7624.

Contact: Ms. Mitzi Adams, NASA Marshall Space Flight Center, Marshall Space Flight Center, AL 35812. E-mail: mitzi.adams@nasa.gov. Phone: 256-961-7626.

Scientist(s): Dr. Mitzi Adams NASA Marshall Space Flight Center Huntsville, AL
Dr. Marc Kippen Los Alamos National Laboratory Los Alamos, NM
Dr. Brian Ramsey NASA Marshall Space Flight Center Huntsville, AL
Dr. Colleen Wilson-Hodges NASA Marshall Space Flight Center Huntsville, AL

Partner(s): Fernbank Science Center Atlanta, GA
University of Florida Gainesville, FL

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Sep 02	30 Sep 03	Fernbank Science Center	Atlanta, GA	0	2,500	0

A25. Hubble Space Telescope: Immersive Dome Visualizations for Planetariums

Theme(s): SEU

Msn/Prgm: HST[B22]

Description: Recent advances in planetarium technology are enabling planetariums large and small to cover their domes with seamless, high-resolution video, putting audiences in the image and taking them on fantastic journeys.

We are creating a family of scientifically accurate immersive visualizations for use in these new formats. The first such visualization, derived from a supercomputer simulation of colliding galaxies, premiered at the Smithsonian's National Air and Space Museum planetarium as part of the new program "Infinity Express." Subsequently, this visualization and two others (a time-lapse view of a globular star cluster and an updated (2003) journey through a computer simulation of the large-scale structure of the universe) were made available to all the major suppliers of immersive planetarium systems, including Spitz, Sky-Skan, Evans and Sutherland, and SGI. They are also available to end-users upon request.

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: <http://informal-sci.stsci.edu/index.html>

A26. Hubble Space Telescope: International Planetarium Society Slide Service

Theme(s): SEU

Msn/Prgm: HST[B22]

Description: In partnership with the International Planetarium Society (IPS), the Space Telescope Science Institute (STScI) distributes first generation 35mm slides of Hubble press release images to planetariums nationwide. Each of the approximately 100 planetariums participating in the service receives high-fidelity slides, paying IPS only for the cost of shipment since STScI furnishes these slides in bulk. During the past year, over 3,660 slides were distributed in this manner, offering planetarium audiences the opportunity to witness Hubble imagery in its full splendor

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: <http://informal-sci.stsci.edu>

A27. Hubble Space Telescope: Online Broadcast-Quality Hubble Video Clip Library

Theme(s): SEU

Msn/Prgm: HST[B22]

Description: Access to high-resolution Hubble imagery has been available for years, but access to high-quality video clips has been limited to those who have contacted the Space Telescope Science Institute (STScI) directly. As a service to planetarium show producers, museum exhibit designers, and other users of high-end media, STScI has begun assembling an on-line library of video clips in the mpeg-2 digital format. This format, used for DVDs and Satellite TV broadcasts, offers very high quality. Via the internet, prospective users can preview low-resolution versions of prospective video clips and download the high-resolution files that they desire.

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Primary URL: <http://informal-sci.stsci.edu/index.html>

A28. International Planetarium Society Partnership

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], Cassini/Huygens Probe[B37], Galileo[B38], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], DSMS[B59]

Description: NASA's Office of Space Science collaborates with the International Planetarium Society, the world's largest professional organization of planetarians. The collaboration includes professional development, participation in IPS conferences, reciprocal participation in science conferences, timely notification of NASA schedules and activities, educational material, and multimedia material. Specific efforts included writing a NASA Space Science News column and insertion of OSS E/PO materials in the four quarterly mailings of The Planetarian magazine, the IPS journal.

Lead: Ms. Anita Sohus, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Anita.M.Sohus@jpl.nasa.gov. Phone: 818-354-6613.

Scientist(s):	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. John Stoke	Space Telescope Science Institute	Baltimore, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 May 03	10 May 03	Middle Atlantic Planetarium Society Conference	Lanham, MD	0	100	0

17 Jun 03 21 Jun 03 SEPA -Southeast Planetarium Association Baton Rouge, LA 0 100 0

A29. Mars Exploration: Visions from Current and Recent NASA Missions

Theme(s): SSE
 Msn/Prgm: SRT[B3]
 Description: The objective of the effort is to increase dissemination of results from the Mars Exploration Rovers (MER) through partnerships with the Adler Planetarium. The project is implementing software programs to display on large plasma screens images received from the two rovers. We have already implemented similar programs for displaying images obtained by the Mars Pathfinder mission. A full scale model of MER is being obtained and will be made available to all school children and Planetarium visitors during MER operations.
 Lead: Dr. Thanasis Economou, University of Chicago, Chicago, IL 60637. E-mail: tecon@tecon.uchicago.edu. Phone: 773-702-7829.
 Scientist(s): Dr. Thanasis Economou University of Chicago Chicago, IL
 Partner(s): Adler Planetarium and Astronomy Museum Chicago, IL

A30. Mars: Informal Educator Workshops

Theme(s): SSE
 Msn/Prgm: Mars E/PO[B40]
 Description: These professional development workshops provide opportunities for informal educators to interact with knowledgeable Mars science and engineering speakers. The workshops include lectures, question and answer, discussion of current scientific discoveries, and the presentation of peer-reviewed classroom activities.
 Contact: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.
 Scientist(s): Dr. Bob Anderson NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Rosalie Betruce NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Kay Ferrari NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Sheri Klug Arizona State University Tempe, AZ
 Ms. Anita Sohus NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Oct 02	31 Oct 02	Marriott Waterside	Norfolk, VA	30	0	0
28 Jan 03	30 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	25	0	0
13 Mar 03	13 Mar 03	University of Houston-Downtown	Houston, TX	15	0	0
13 Jun 03	13 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	25	0	0

A31. Mars: Museum Visualization Alliance

Theme(s): SSE
 Msn/Prgm: Mars E/PO[B40]
 Description: The Mars Museum Visualization Alliance is a partnership with science centers, museums, and other informal education partners to disseminate collections of imagery for significant exhibition displays and large-screen viewings. The vision of the Mars Museum Visualization Alliance is to share the adventure of Mars exploration with the public, through the unique facilities and staff of the member institutions. Museums, science centers, and planetariums are venues for the public to "ride along" on NASA missions. During major mission events, participating institutions will have assured and uninterrupted access to visualizations, something that can prove challenging if they are competing on the Internet with hundreds of thousands of interested members of the public. Over 100 organizations are receiving Mars Exploration Rover images and information on a daily basis and sharing them with their live audiences. Audiences are stunned when they understand that they are seeing "almost-live" images from the surface of Mars. Says one planetarium director, "The magic for me is putting the live stuff into our daily programming. The planetarium truly becomes a place of learning."
 Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: mviotti@pop.jpl.nasa.gov. Phone: 818-354-8774.
 Scientist(s): Dr. Paul Andres NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Susan Braunheim-Kalogerakos NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Eric De Jong NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Christine Johnson NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Anita Sohus NASA Jet Propulsion Laboratory Pasadena, CA

Mr. Aurelio Tineo	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Lance Watanabe	Raytheon STX	Lanham, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	2	0	0
01 Oct 02	30 Sep 03	American Museum of Natural History	New York, NY	2	0	0
01 Oct 02	30 Sep 03	Carnegie Mellon University	Pittsburgh, PA	2	0	0
01 Oct 02	30 Sep 03	Chabot Space and Science Center	Oakland, CA	2	0	0
01 Oct 02	30 Sep 03	Denver Museum of Nature and Science	Denver, CO	2	0	0
01 Oct 02	30 Sep 03	Exploratorium	San Francisco, CA	2	0	0
01 Oct 02	30 Sep 03	Houston Museum of Natural Science	Houston, TX	2	0	0
01 Oct 02	30 Sep 03	International Planetarium Society	Bozeman, MT	2	0	0
01 Oct 02	30 Sep 03	Maryland Science Center	Baltimore, MD	2	0	0
01 Oct 02	30 Sep 03	Museum of Science	Boston, MA	2	0	0
01 Oct 02	30 Sep 03	New Mexico Museum of Natural History and Science	Albuquerque, NM	2	0	0
01 Oct 02	30 Sep 03	Science Museum of Minnesota	St. Paul, MN	2	0	0
01 Oct 02	30 Sep 03	Smithsonian National Air and Space Museum	Washington, DC	2	0	0
01 Oct 02	30 Sep 03	Space Science Institute	Boulder, CO	2	0	0
15 Oct 02	15 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	28	0	0

A32. Mars: Models and Exhibits

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: The Mars models and exhibits, which are loaned or set up in coordination with museum and other informal education institution partners, allow the general public to learn about mission hardware and experience the excitement of ongoing discoveries.

Contact: Ms. Connie Gennaro, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Consuelo.Gennaro@jpl.nasa.gov. Phone: 818-393-2502.

Scientist(s): Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	03 Aug 03	Chabot Space and Science Center	Oakland, CA	0	50,000	0
01 Oct 02	30 Sep 03	Disneyland	Anaheim, CA	0	1,000,000	0
29 Oct 02	30 Sep 03	Space Science Institute	Boulder, CO	0	15,000	0
02 Dec 02	15 May 03	San Diego Aerospace Museum	San Diego, CA	0	161,000	0
03 May 03	03 Jul 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	40,000	0

A33. Mars: Museum and Other Informal Education Lectures

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Contact: Ms. Connie Gennaro, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Consuelo.Gennaro@jpl.nasa.gov. Phone: 818-393-2502.

Scientist(s): Dr. Bob Anderson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Natacha Chough	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Phil Christensen	Arizona State University	Tempe, AZ
Mr. Orlando Figueroa	NASA Office of Space Science	Washington, DC
Ms. Pam Hoffman	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Roger Klemm	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Jennifer Law	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Randell Lindemann	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Squyres	Cornell University	Ithaca, NY

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	27 Mar 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	250	0
10 Apr 03	10 Apr 03	Smithsonian National Air and Space Museum	Washington, DC	200	0	0
11 Jun 03	11 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
12 Jun 03	12 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
18 Jun 03	18 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
19 Jun 03	19 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
25 Jun 03	25 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
29 Jun 03	29 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	150	0
06 Sep 03	06 Sep 03	Bishop Museum	Honolulu, HI	0	200	0

A34. Maryland Science Center SpaceLink Teachers' Thursdays

Theme(s): SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], MARSSB[B17]

Description: The Mid-Atlantic Region Space Science Broker (MARSSB) worked with the Maryland Science Center Teachers' Thursday distance learning program to provide teleconference participation for teachers at the Western Kentucky University, Glasgow campus, and teachers in the NASA Resource Center in Fairmont, West Virginia.

Lead: Mr. Flavio Mendez, Maryland Science Center, Baltimore, MD 21230. E-mail: mendez@mdsci.org. Phone: 410-545-5995.Contact: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: sjones@cet.edu. Phone: 202-554-6487.Primary URL: <http://marssb.cet.edu/public/main.html>2nd URL: <http://www.mdsci.org/exhibits/spacelink/educators/teacherthursday>

Scientist(s):	Ms. Becca Horne	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Flavio Mendez	Maryland Science Center	Baltimore, MD
	Dr. Rico Tyler	Western Kentucky University	Bowling Green, KY

Partner(s):	Western Kentucky University	Bowling Green, KY
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Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Sep 03	25 Sep 03	Maryland Science Center	Baltimore, MD	0	50	0

A35. "MSXcellent!"

Theme(s): ASO

Msn/Prgm: SRT[B3]

Description: "MSXcellent!" is designed to increase public knowledge of infrared astronomy. We are pursuing two initial activities using the remarkable images of the Galactic Plane secured by the Midcourse Space Experiment (MSX). First, we are working with the Lawrence Hall of Science planetarium to modify an existing show ("Colors from Space") to demonstrate the effects of expanding our limited wavelength into the infrared. The modified show will focus on the kinds of mechanisms that can be probed by these long wavelengths, the advantages of reduced interstellar absorption, and exciting phenomena such as the birth and death of ordinary stars like the Sun. The show will be brokered through Learning Technologies, Inc. In our second activity, we will work with John Stoke, manager of informal science education at the Space Telescope Science Institute (STScI), to incorporate images from the MSX mid-infrared panoramic survey of the Galactic Plane into the STScI "ViewSpace" CD-ROM for planetariums and space centers. We are currently evaluating whether a "Milky Way" tour would be more effective than the investigation of a few specific phenomena along the Galactic Plane. Our objective in both activities is to reveal the power of infrared, as its own entity, and as a means for scientific investigation using the broadest range of the electromagnetic spectrum.

Lead: Dr. Martin Cohen, University of California, Berkeley, Berkeley, CA 94720. E-mail: mcohen@astro.berkeley.edu. Phone: 510-642-2833.

Scientist(s):	Dr. Martin Cohen	University of California, Berkeley	Berkeley, CA
Partner(s):	Lawrence Hall of Science		Berkeley, CA
	Space Telescope Science Institute		Baltimore, MD

A36. NASA Ames Astrobiology Institute Lead Team

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The astrobiology team at NASA's Ames Research Center has created a formal and informal education partnership with the California Academy of Sciences (CAS) to increase public knowledge of astrobiology, an emerging field that bridges the natural history, planetarium, and aquarium components of many museums and science centers. The Ames team is working with CAS science directors, education specialists, researchers, architects, and exhibit design firms to develop new exhibits and professional development programs for docents, area educators, and research partners. These exhibits, "Earth and it's Place in the Universe" and "Water is Life," focus on NASA Astrobiology themes regarding the role of water and conditions that allow the origin, development, persistence of life. The docent training partnership focuses on providing information about our scientific research to the docents who meet the public at CAS on a daily basis. The docents are invited to the astrobiology laboratories at Ames to receive tours of the greenhouse facility, which maintains live microbial mats, and the astrochemistry lab. The Ames education office provides docents with materials, laboratory experiences, and access to researchers as they design museum tours focused on the exhibits we are developing with CAS. CAS reaches 800,000 diverse visitors annually.

Contact: Ms. Catherine Tsairides, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: ctsairides@mail.arc.nasa.gov. Phone: 650-604-0808.

Scientist(s):	Dr. Max Bernstein	SETI Institute	Mountain View, CA
	Dr. David Des Marais	NASA Ames Research Center	Moffett Field, CA
	Dr. Terrence Gosliner	California Academy of Sciences	San Francisco, CA
	Dr. Tori Hoehler	NASA Ames Research Center	Moffett Field, CA
	Dr. Rocco Mancinelli	SETI Institute	Mountain View, CA
	Ms. Lynn Rothschild	NASA Ames Research Center	Moffett Field, CA
	Dr. Carol Tang	California Academy of Sciences	San Francisco, CA

A37. NASA Astrobiology Institute: "Cosmic Origins" Traveling Museum Exhibit

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The NASA Astrobiology Institute (NAI) is assisting the Space Science Institute, Boulder, CO, in the development of a 3,000 square-foot traveling museum exhibit. The exhibit, with the working title "Cosmic Origins", has three major themes—star birth, extra-solar planets, and the search for life in the cosmos. NAI has provided microbiologists John Spears and Brad Bebout as advisors to the exhibit as well as funding for museum educator professional development in astrobiology. Krisstina Wilmoth, NAI manager for education and public outreach, is serving as content lead for the "search for life" component. The exhibit, scheduled for completion in late 2004, will travel to small and medium-sized science centers and museums across the United States over the next 3–6 years.

Lead: Ms. Krisstina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Primary URL: <http://www.spacescience.org/Products/Exhibits/1.html>

Partner(s): Space Science Institute

Boulder, CO

A38. Navigator Program Museum Exhibits and Alliances

Theme(s): ASO

Msn/Prgm: Navigator[B27], KECK[B28], SIM[B31], TPF[B32]

Description: Navigator E/PO has developed a permanent PlanetQuest kiosk at The Keck Visitors Center at Mauna Kea allowing visitors to take a "virtual tour" of the Keck Interferometer. The Center receives about 100,000 visitors per year. Navigator is also creating materials and sponsoring events in conjunction with the 2004 broadcast of the PBS series "Origins." Navigator E/PO is also supporting the Space Science Institute's development of a traveling 3-year exhibition on the search for cosmic origins. The interactive exhibit will have three interrelated components: "Star Birth," "PlanetQuest," and "Search for Life: Are We Alone?"

Lead: Mr. Randal Jackson, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Randal.K.Jackson@jpl.nasa.gov. Phone: 818-393-5925.

Partner(s): American Museum of Natural History
 Pacific Science Center, Seattle, WA
 Event(s):

New York, NY

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	American Museum of Natural History	New York, NY	0	100,000	0
01 Oct 02	30 Sep 03	W.M. Keck Observatory	Kamuela, HI	0	100,000	0
08 Aug 03	08 Aug 03	International Planetarium Society	Los Angeles, CA	0	0	0

A39. Observatory, Planetarium, Theater Project

Theme(s): SEC, SEU, SSE

Msn/Prgm: OSS Science Center Development[B8]

Description: The Observatory, Planetarium, Theater Project will expand the South Carolina State Museum by adding an astronomical observatory, multimedia planetarium and large-format theater. These additions will establish the State Museum as South Carolina's first major center for informal science education. Funding from the NASA Office of Space Science is being used to equip the planetarium with multimedia projection technology, a projection dome, and sound and lighting systems. In 2003, the State Museum, in conjunction with the state of South Carolina's Office of General Services, conducted a formal procurement process to select the prime planetarium equipment contractor. After studying proposals from four major firms, the State Museum selected Evans and Sutherland of Salt Lake City, Utah, and its Digistar-3 system, which combines digital starfield projection and all-dome video capability. The Evans and Sutherland proposal also included an Omniscan laser-projection system, a seat-side audience feedback system, and assistive technology for the hearing- and vision-impaired. When installed in the new planetarium, this sophisticated equipment will enable the State Museum to present a wide range of interactive educational programs in space science, earth science, and other scientific disciplines.

Lead: Mr. William Calloway, South Carolina State Museum, Columbia, SC 29201. E-mail: callow@museum.state.sc.us. Phone: 803-898-4930.

Primary URL: <http://www.museum.state.sc.us>

A40. Outreach to Community Planetariums

Theme(s): SEC

Msn/Prgm: MARSSB[B17]

Description: The goal of this series of activities was to introduce Mid-Atlantic Region Space Science Broker (MARSSB) services to small, community-focused planetariums. A selection of educator materials (primarily Sun-Earth Educator Kits) were distributed to planetarium directors subsequent to telephone or personal communications with them to find out their needs and areas of greatest interest.

Lead: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: sjones@cet.edu. Phone: 202-554-6487.

Primary URL: <http://spacescience.nasa.gov>

2nd URL: <http://www.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Mar 03	03 Mar 03	Brish Planetarium	Hagerstown, MD	0	70	0
11 Mar 03	11 Mar 03	Rock Creek Park Nature Center and Planetarium	Washington, DC	0	70	0

A41. SkyTellers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: LPI[B61]

Description: The SkyTellers program explores space science concepts through Native American legends. SkyTellers is a space science and astronomy resource designed for small planetariums, museums, libraries, classrooms, youth groups, and home school settings. Twelve traditional Native American stories are complemented by an explanation of the phenomenon as currently understood by scientists. The myths and their accompanying scientific explanations, presented in audio CD format, are told by master story tellers and prominent space scientists. The stories are supplemented by images and illustrations for projection and a resource guide of suggested books, videos, Web sites, and other materials. SkyTellers is currently in development with a team headed by master storyteller Lynn Maroony. The program will be evaluated in a small number of informal and

formal learning settings in 2003 and 2004, with an anticipated full release date in 2005. Funding for the program is provided by the National Science Foundation.

Contact: Dr. Stephanie Shipp, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: shipp@lpi.usra.edu.
Phone: 281-486-2109.

Primary URL: <http://www.lpi.usra.edu/education/skytellers>

Partner(s): East Tennessee State University
University of New Mexico

Johnson City, TN
Albuquerque, NM

A42. Stardust Informal Outreach

Theme(s): SSE

Msn/Prgm: Stardust[B56]

Description: Stardust mission informal outreach efforts continue to make direct contact with science centers, planetariums, and museums throughout the United States that are interested in either appending Stardust to existing displays or adding an additional display about the Stardust project and NASA's exploration of comets. Stardust informal outreach efforts will continue to pursue inclusion into museum exhibits about Solar System exploration, cometary science, small bodies exploration, and emerging technologies such as aerogel.

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

Primary URL: <http://stardust/classroom/museums.html>

2nd URL: <http://stardust.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Feb 03	09 Feb 03	Kent District Library	Wyoming, MI	81	0	0
01 Apr 03	01 Apr 03	University of Missouri-Kansas City	Kansas City, MO	65	0	0
14 May 03	14 May 03	Pacific Science Center	Seattle, WA	0	1,000	0

A43. "Visualizing the Interplanetary Environment of the Heliosphere and Solar System, and Interactions with Interstellar Matter"

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SRT[B3]

Description: An animated video production is being developed that employs measured astrophysical data to exhibit features of the interaction between the Sun and its galactic environment, including a detailed scientific model of the heliosphere. The features of the animation include a wide range of astrophysical data providing support for visualizing our galactic context. The data provided includes imagery of the Milky Way; a data-constrained heliosphere model, including the bow shock, termination shock, and heliopause; and models of interstellar clouds and supernova remnants near the Sun. The objective of this video is to provide spatially and scientifically accurate context information for those needing to understand and explain astrophysical data and its importance. The interactive software tool used to construct and design the animation may be incorporated into an interactive educational science museum kiosk.

Lead: Dr. Priscilla Frisch, University of Chicago, Chicago, IL 60637. E-mail: frisch@oddjob.uchicago.edu. Phone: 773-702-0181.

Contact: Dr. Andrew Hanson, Indiana University, Bloomington, Bloomington, IN 47401. E-mail: hansona@indiana.edu.
Phone: 812-855-5855.

Scientist(s): Dr. Priscilla Frisch

University of Chicago

Chicago, IL

TARGETED OUTREACH

Minority Institution Initiative in Space Science

A44. An Urban Outreach Program in Space Science: A Collaborative Effort Between NASA, Hispanic-Serving and Black Universities, and School-Age Minority Students

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: An Urban Outreach Program in Space Science has encouraged and developed innovative space science outreach programs that are relevant to diverse urban populations. The collaboration between the University of Houston-Downtown (UHD), a Hispanic-serving institution; Texas Southern University (TSU), a Historically Black College; the Houston Museum of Natural Science (HMNS), an inner city museum; and NASA Johnson Space Center (JSC) has enhanced space science education and outreach programs in the greater Houston area. Raul Yzaguirre School for Success (RYSS), a predominantly Hispanic-serving charter school for grades pre-K to 12, is an important collaborator. To accomplish our primary goal of sharing space science with underrepresented students and educators, we have done the following: (1) designed interactive space science demonstrations and presentations, including hands-on activities for events at HMNS, in community settings and in urban area public and charter schools; (2) trained Space Science Student Ambassadors from minority-serving high schools and colleges to present programs at local venues, including city youth events, the HMNS, the Mexican American Engineers and Scientists annual meeting, the Hispanic Forum, a Hispanic-serving charter school, public schools, and YMCA camps; (3) continued an intern program for minority university students to conduct research side-by-side with JSC scientists; and (4) conducted in-service and graduate courses for science teachers who attended minority-serving universities. Our programs were a success. The Space Science Student Ambassadors gained self-confidence and poise by presenting activities to the public. Our interns successfully worked with JSC scientists, presenting their work at their respective institutions and professional science conferences. Houston Independent School District enthusiastically supported our in-service programs and workshops.

Lead: Dr. Penny Morris, University of Houston-Downtown, Houston, TX 77002. E-mail: smithp@uhd.edu; pmorris@ems.jsc.nasa.gov. Phone: 713-221-8178.

Primary URL: <http://www.tccc-ryss.org/solarsys/webquest.htm>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Ms. Sangeeta Gad	University of Houston-Downtown	Houston, TX
	Mr. Charles Galindo	NASA Johnson Space Center	Houston, TX
	Ms. Olivia Garza	Raul Yzaguirre School for Success	Houston, TX
	Dr. Poonam Gulati	University of Houston-Downtown	Houston, TX
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Dr. David McKay	NASA Johnson Space Center	Houston, TX
	Dr. Glen Merrill	University of Houston-Downtown	Houston, TX
	Dr. Penny Morris-Smith	University of Houston-Downtown	Houston, TX
	Ms. Andrea Mosie	NASA Johnson Space Center	Houston, TX
	Dr. Victor Obot	Texas Southern University	Houston, TX
	Dr. Patricia Reiff	Rice University	Houston, TX
	Dr. Carolyn Sumners	Houston Museum of Natural Science	Houston, TX
	Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
	Ms. Susan Wentworth	Lockheed Martin Corporation	Houston, TX
	Mr. James Wooten	Houston Museum of Natural Science	Houston, TX
Partner(s):	Houston Museum of Natural Science		Houston, TX
	NASA Johnson Space Center		Houston, TX
	NASA Office of Education		Washington, DC
	Raul Yzaguirre School for Success		Houston, TX
	Texas Southern University		Houston, TX

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Dec 02	Raul Yzaguirre School for Success	Houston, TX	4	0	0

08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	1645	20	0
20 Nov 02	20 Nov 02	Raul Yzaguirre School for Success	Houston, TX	80	4	0
23 Nov 02	23 Nov 02	Hohl Elementary School	Houston, TX	57	0	0
01 Dec 02	01 May 03	Raul Yzaguirre School for Success	Houston, TX	36	0	0
28 Feb 03	28 Feb 03	NASA Johnson Space Center	Houston, TX	12	0	0
08 Mar 03	08 Mar 03	Texas Southern University	Houston, TX	40	0	0
22 Mar 03	22 Mar 03	Houston Museum of Natural Science	Houston, TX	18	2,500	0
26 Apr 03	26 Apr 03	Houston Museum of Natural Science	Houston, TX	10	0	0
26 Apr 03	26 Apr 03	Houston Museum of Natural Science	Houston, TX	8	0	0
05 May 03	05 May 03	K. E. Little Elementary School	Bacliff, TX	104	0	0
24 May 03	24 May 03	Houston Museum of Natural Science	Houston, TX	9	0	0
01 Jun 03	01 Sep 03	University of Houston-Downtown	Houston, TX	1	0	0
03 Jun 03	03 Jun 03	University of Houston-Downtown	Houston, TX	9	0	0
09 Jun 03	20 Jun 03	Texas Southern University	Houston, TX	15	0	0
09 Jun 03	14 Jul 03	University of Houston-Downtown	Houston, TX	205	0	0
16 Jun 03	17 Jul 03	Raul Yzaguirre School for Success	Houston, TX	45	0	0
20 Jun 03	20 Jun 03	NASA Johnson Space Center	Houston, TX	6	0	0
23 Jun 03	27 Jun 03	North Galveston YMCA	League City, TX	49	0	0
07 Jul 03	10 Aug 03	Texas Southern University	Houston, TX	8	0	0
12 Jul 03	12 Jul 03	Simon Kidgits Club of Simon Property Group	Indianapolis, IN	0	100	0
15 Jul 03	15 Jul 03	University of Houston-Downtown	Houston, TX	134	0	0
29 Jul 03	31 Jul 03	Lake Houston YMCA	Humble, TX	34	0	0
01 Aug 03	01 Aug 03	Harris County Precinct 1 Street Olympics	Houston, TX	3,100	0	0
03 Aug 03	03 Aug 03	Families Under Urban & Social Attack, Inc.	Houston, TX	0	260	0

A45. Astronomy and Astrophysics Course Development at Salish Kootenai College

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: The goals of this project are to develop an associate degree transfer program in astronomy and astrophysics, better prepare Salish Kootenai College (SKC) students to participate in ongoing astrophysics research at SKC, and increase the astronomy literacy of non-science majors. To achieve these goals, three new courses in astronomy and astrophysics have been developed and offered: Introduction to Astronomy, Stellar Astronomy and Astrophysics, and Galactic Astronomy and Astrophysics. SKC library holdings in astronomy and astrophysics were enhanced through the purchase of 115 new volumes and subscriptions to astronomy and astrophysics magazines and journals. A new associate degree transfer program in astronomy and astrophysics has been created that allows students to transfer at the junior level into a baccalaureate degree program at another institution.

Lead: Dr. Timothy Olson, Salish Kootenai College, Pablo, MT 59855. E-mail: tim_olson@skc.edu. Phone: 406-275-4898.

Partner(s): NASA Office of Education

Washington, DC

A46. Collision Processes in Astrophysical Plasmas

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: Collision processes important for understanding astrophysical plasmas were studied computationally and experimentally. The collision of atomic ions and electrons with atoms and molecules was the subject of the research. The principal focus has been the computational and experimental study of charge exchange collisions and the determination of collision cross sections. This provided spectral diagnostics of galactic and stellar X-ray emissions from charge exchange recombination. In addition, electron impact scattering, with a particular emphasis on excitation, was studied. The research supported the NASA Chandra Emission Line Project. The experimental effort used an electron beam ion trap (EBIT) to study X-ray emission from charge-exchange recombination (CER), and radiative recombination (RR) of neutral hydrogen and helium with highly charged ions, deriving cross sections as a function of temperature. The calculations employed several related computational theories. A new method using numerical wave-packets with an implicit split-operator propagator (ISOP), that employed fast Fourier transforms was used. This code has the highly desirable feature of avoiding translation factors. The ISOP employs a short-time propagator and is second-order accurate in time. A more traditional time-dependent close-coupling (TDCC) molecular orbital method using translation factors to describe the CER and RR processes was also employed. Both of these theory codes produce state-specific

cross sections. They are based on significantly different theoretical approaches and will be cross-checked with each other to provide a very high level of theoretical validation.

Lead: Dr. Charles Weatherford, Florida A&M University, Tallahassee, FL 32307. E-mail: weatherf@cennas.nhmfl.gov. Phone: 850-599-3767.

Primary URL: <http://www.physics.famu.edu/~cweatherford>

Scientist(s):	Dr. Peter Beiersdorfer	Lawrence Livermore National Laboratory	Livermore, CA
	Dr. Hui Chen	Lawrence Livermore National Laboratory	Livermore, CA
	Dr. Kennedy Reed	Lawrence Livermore National Laboratory	Livermore, CA
	Dr. Adam Ritchie	Lawrence Livermore National Laboratory	Livermore, CA
	Dr. Elmar Traebert	Lawrence Livermore National Laboratory	Livermore, CA
	Dr. Bradley Wargelin	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Charles Weatherford	Florida A&M University	Tallahassee, FL
Partner(s):	Harvard-Smithsonian Center for Astrophysics,		Cambridge, MA
	Lawrence Livermore National Laboratory		Livermore, CA
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Mar 02	05 Mar 02	Florida A&M University	Tallahassee, FL	90	0	0
22 Oct 02	22 Oct 02	Florida A&M University	Tallahassee, FL	100	0	0
22 Oct 02	22 Oct 02	Florida A&M University	Tallahassee, FL	100	0	0
03 Dec 02	03 Dec 02	Florida A&M University	Tallahassee, FL	50	0	0
27 May 03	06 Jun 03	Lawrence Livermore National Laboratory	Livermore, CA	8	0	0

A47. Connecting Sun City with Sun-Earth Connections

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: Connecting Sun City with Sun-Earth Connections is a broad-based set of activities that use space science to improve science education and motivate students to pursue science majors. Our project shows students and teachers the connections between space science and the disciplines of physics, chemistry, biology, geological sciences, and mathematics. The elements of our project are professional development programs for teachers to help them teach students more effectively, activities for high school and middle school students to encourage them to pursue science careers, public outreach in space science through a collaboration with Insights El Paso Science Museum, and the involvement of University of Texas at El Paso students.

Lead: Dr. Ramon Lopez, University of Texas at El Paso, El Paso, TX 79968. E-mail: relopez@utep.edu. Phone: 915-747-7534.

Primary URL: <http://nasa.utep.edu/suncity>

Scientist(s):	Mr. Julian Antolin	University of Texas at El Paso	El Paso, TX
	Mr. Robert Bruntz	University of Texas at El Paso	El Paso, TX
	Dr. Philippe Escoubet	European Space Agency Research and Technology Centre	Noorwick Netherlands
	Mr. Ramon Figueroa	University of Texas at El Paso	El Paso, TX
	Ms. Jennifer Gursky	University of Texas at El Paso	El Paso, TX
	Dr. Kastro Hamed	University of Texas at El Paso	El Paso, TX
	Mr. Salvador Hernandez	University of Texas at El Paso	El Paso, TX
	Mr. Vishal Kapoor	University of Texas at El Paso	El Paso, TX
	Dr. Ramon Lopez	University of Texas at El Paso	El Paso, TX
	Mr. Juan Rodriguez	University of Texas at El Paso	El Paso, TX
	Dr. Niescja Turner	University of Texas at El Paso	El Paso, TX
	Dr. Lev Zelenyi,	Space Research Institute	Moscow, Russia
Partner(s):	Alabama A&M University		Normal, AL
	Insights El Paso Science Museum		El Paso, TX
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	University of Texas at El Paso	El Paso, TX	6	0	0

08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	0	20	0
17 Oct 02	17 Oct 02	University of Texas at El Paso	El Paso, TX	18	0	0
21 Oct 02	21 Oct 02	KTEP Radio, 88.5 FM/El Paso	El Paso, TX	0	1,000	0
21 Oct 02	21 Oct 02	University of Texas at El Paso	El Paso, TX	105	0	0
12 Nov 02	12 Nov 02	Socorro Independent School District	El Paso, TX	37	0	0
04 Apr 03	04 Apr 03	Universities Space Research Association Conference	Washington, DC	60	0	0
24 Apr 03	24 Apr 03	University of Texas at El Paso	El Paso, TX	122	0	0
09 May 03	09 May 03	Sun City Amateur Radio Club	El Paso, TX	20	0	0
15 Jul 03	18 Jul 03	University of Texas at El Paso	El Paso, TX	18	0	0
24 Jul 03	24 Jul 03	Coast to Coast AM	Palm Coast, FL	0	15,000	0

A48. Enhancement of the Space Science Research Program at South Carolina State University

Theme(s): ASO, SEC, SEU, SSE

Msn/Prm: MI Initiative[B2], SERCH B/F[B19], HST[B22], NAI[B34]

Description: South Carolina State University (SCSU) has completed a highly successful 3-year development of a comprehensive approach to research and education in space science. Work under this award from the Office of Space Science included a significant number of new and exciting collaborations and activities in faculty research, undergraduate student research, curriculum development, teacher training and public outreach. A new-hire, tenure-track position in astrophysics was created and filled. One faculty member worked with the Advanced Detector Group at the Lawrence Livermore National Laboratory (LLNL) on the design of cryogenic, photon-counting cameras. Another faculty member published peer-review papers on his Hubble research and is preparing proposals to use HST, SIRTf and other NASA observatories. A total of ten minority students from around the country were funded to work with leading researchers at the Goddard Space Flight Center, Kitt Peak National Observatory, LLNL, the Planetary Science Institute and the University of South Carolina. SCSU conducted a very popular, one-week course on space science for in-service teachers for three summers. The course was standards-based with numerous hands-on activities. One SCSU faculty member assisted a local middle school in receiving a NASA Explorer School Award, one of only 50 schools selected nationwide. Under curriculum development, one faculty member has revised existing space science courses, while a second faculty member has developed labs that study the large scale structure of the universe using materials posted on the web. This work lead to collaborations with an educational specialist at John Hopkins University, and an astrophysicist at the Adler Planetarium in Chicago. SCSU has been able to significantly enhance and enlarge its astronomy program, including adding numerous local and national partnerships. The University will continue to be a participant in the field for years to come.

Lead: Dr. Donald Walter, South Carolina State University, Orangeburg, SC 29117. E-mail: dkw@physics.scsu.edu. Phone: 803-533-3773.

Scientist(s):	Dr. Jennifer Cash	South Carolina State University	Orangeburg, SC
	Dr. James Payne	South Carolina State University	Orangeburg, SC
	Dr. Linda Payne	South Carolina State University	Orangeburg, SC
	Dr. Daniel Smith	South Carolina State University	Orangeburg, SC
	Dr. Donald Walter	South Carolina State University	Orangeburg, SC
Partner(s):	Adler Planetarium and Astronomy Museum		Chicago, IL
	Arizona State University		Tempe, AZ
	California Institute of Technology		Pasadena, CA
	Carver-Edisto Middle School		Cordova, SC
	College of Charleston		Charleston, SC
	CUNY Medgar Evers College		Brooklyn, NY
	Francis Marion University		Florence, SC
	Johns Hopkins Applied Physics Laboratory		Laurel, MD
	Johns Hopkins University		Baltimore, MD
	Lawrence Livermore National Laboratory		Livermore, CA
	NASA Goddard Space Flight Center		Greenbelt, MD
	NASA Office of Education		Washington, DC
	National Optical Astronomy Observatory		Tucson, AZ
	Orangeburg-Calhoun Technical College		Orangeburg, SC
	Pisgah Astronomical Research Institute		Rosman, NC

Planetary Science Institute	Tucson, AZ
Rice University	Houston, TX
Talladega College	Talladega, AL
Tennessee State University	Nashville, TN
University of Chicago	Chicago, IL
Villanova University	Villanova, PA
Western Kentucky University	Bowling Green, KY

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Nov 02	08 Nov 02	South Carolina Science Council	Myrtle Beach, SC	28	0	0
25 Jan 03	25 Jan 03	South Carolina Regional Instruction Fair	Aiken, SC	372	0	0
08 Feb 03	08 Feb 03	South Carolina State University	Orangeburg, SC	350	0	0
04 Jun 03	06 Jun 03	South Carolina State University	Orangeburg, SC	5	0	0
09 Jun 03	20 Jun 03	South Carolina State University	Orangeburg, SC	20	0	0
19 Jun 03	19 Jun 03	South Carolina State University	Orangeburg, SC	380	20	0
21 Jul 03	25 Jul 03	South Carolina State University	Orangeburg, SC	10	0	0
21 Aug 03	30 Sep 03	South Carolina State University	Orangeburg, SC	32	0	0
26 Aug 03	30 Sep 03	South Carolina State University	Orangeburg, SC	30	0	0
09 Sep 03	09 Sep 03	South Carolina State University	Orangeburg, SC	100	0	0

A49. NASA-HBCU Partnership to Enhance Minority Education and Research Participation in the Space Sciences

Theme(s): SEU

Msn/Prgm: MI Initiative[B2]

Description: This project had three main components: (1) enhancement of Norfolk State University (NSU)'s faculty and student participation in the space sciences; (2) astronomy education of high school science teachers; and (3) general public outreach. We collaborated with members of the Laboratory of High Energy Astrophysics at the NASA Goddard Space Flight Center in our research and public outreach efforts. Our faculty has begun a study of primary cosmic rays through the analysis of data from the Ballon-Borne Experiment with superconducting Solenoidal Spectrometer BESS experiment. We hired a research associate who, together with members of the NSU faculty and students, worked in the analysis of primary cosmic rays and particle fluxes through the atmosphere. We began teaching two courses for high school in-service teachers: "Fundamentals of Astronomy" and "Observational Astronomy". We had about 87 in-service teachers from several Hampton Roads school systems participate. During the summer, we held astronomy workshops attended by high and middle school teachers and the general public. The workshop, entitled "Frontiers in Astronomy," had about 50 participants, in which speakers covered recent results from astronomical NASA missions. NSU's administration and the local community have received the program very enthusiastically, and as a result, we are now planning for a minor in Astronomy and an astronomical observatory. Our outreach program has been centered at the NSU Planetarium. The Planetarium went through a major overhaul during the time of this project. We are now preparing new shows for the general public and the NSU community. We have conducted astronomical seminars and shows at the Planetarium, where guest speakers presented the latest astronomical advances to the members of the general public and the NSU community.

Lead: Dr. Carlos Salgado, Norfolk State University, Norfolk, VA 23504. E-mail: salgado@jlab.org. Phone: 757-269-5829.

Partner(s): NASA Goddard Space Flight Center
NASA Office of Education

Greenbelt, MD
Washington, DC

A50. New Opportunities Through Minority Initiatives in Space Science

Theme(s): ASO, SEC

Msn/Prgm: MI Initiative[B2]

Description: New Opportunities through Minority Initiatives in Space Science (NOMISS) is designed to encourage minority students (particularly those of Hawaiian ancestry) to engage in learning about culture and its relevance to the study of space science. the goal of the program is to increase public awareness of astronomy within the Hawaiian community is a goal of the program. NOMISS activities engage a broad spectrum of participants—K–12 students and their teachers, undergraduate university students and their professors, and community partners—by bringing together modern space science and concepts of Hawaiian celestial navigation and tra-

ditions of the land. Dr. Richard Crowe, University of Hawaii at Hilo at Hilo (UHH) Professor of astronomy, initiated the astronomy department's summer astrophysics course with telescopic observations from the summit of Mauna Kea. The redesigned undergraduate astronomy curriculum includes a new textbook, a spectrograph, and cultural information. Partnerships with observatories (Gemini, Institute for Astronomy, NASA IRTF, Joint Astronomy Centre, Subaru, and Keck) provide internships for participation in current space science research. UHH Education Chair Dr. Alice Kawakami leads a network of K-12 teachers who participated in two summer retreats and three protocol workshops with classroom activities and excursions to cultural sites, including Mauna Kea. Teachers' experiences are being passed on to their students through a new curriculum that integrates astronomy and Hawaiian culture. In the summer of 2003, NOMISS implemented a pilot Hawaiian Astronomy Institute for fourth grade Kamehameha School students as a model for the new curriculum. Coordinator Nathan Chang has been responsible for handling administrative duties, generating publicity, and assisting with links to business and community organizations. Public interest in NOMISS activities is high as this unique program is helping to bridge diverse perspectives about space science and Mauna Kea, the best observational astronomy site on Earth.

Lead: Dr. Richard Crowe, University of Hawaii at Hilo, Hilo, HI 96720-4091. E-mail: rcrowe@hubble.uhh.hawaii.edu. Phone: 808-974-7649.

Contact: Mr. Nathan Chang, University of Hawaii at Manoa, Honolulu, HI 96822. E-mail: nchang69@hotmail.com. Phone: 808-933-3331.

Primary URL: <http://hubble.uhh.hawaii.edu/index.html>

2nd URL: <http://hubble.uhh.hawaii.edu/telescope.html>

Scientist(s):

Dr. Bobby Bus	NASA Infrared Telescope Facility	Honolulu, HI
Dr. Paul Coleman	University of Hawaii at Manoa	Honolulu, HI
Dr. Richard Crowe	University of Hawaii at Hilo	Hilo, HI
Dr. Darren DePoy	Ohio State University	Columbus, OH
Dr. Scott Fisher	Gemini Observatory	Hilo, HI
Dr. William Heacox	University of Hawaii at Hilo	Hilo, HI
Dr. Klaus Hodapp	University of Hawaii at Manoa	Honolulu, HI
Dr. Steve Kawaler	Iowa State University	Ames, IA
Dr. Rolf Kudritzki	University of Hawaii at Manoa	Honolulu, HI
Ms. Jennifer Marshall	Ohio State University	Columbus, OH
Mr. Dennis McBride	W.M. Keck Observatory	Kamuela, HI
Dr. Peter Michaud	Gemini Observatory	Hilo, HI
Dr. Andrew Pickles	University of Hawaii at Manoa	Honolulu, HI
Dr. Reed Riddle	Iowa State University	Ames, IA
Dr. Marc Seigar	Joint Astronomy Centre	Hilo, HI
Dr. Marcos Van Dam	Lawrence Livermore National Laboratory	Livermore, CA
Mr. Darryl Watanabe	NASA Infrared Telescope Facility	Honolulu, HI

Partner(s):

Connections Public Charter School	Hilo, HI
Gemini Observatory	Hilo, HI
Hilo Intermediate School	Hilo, HI
Iowa State University	Ames, IA
Joint Astronomy Centre	Hilo, HI
Kamehameha Elementary School	Keaau, HI
Kamehameha Elementary School	Honolulu, HI
Kamehameha High School	Keaau, HI
Kamehameha High School	Honolulu, HI
Kamehameha Middle School	Keaau, HI
Ke Ana La'ahana Public Charter School	Hilo, HI
Lawrence Livermore National Laboratory	Livermore, CA
Na Kalai Wa'a Moku o Hawaii	Kawaihae, HI
NASA Infrared Telescope Facility	Honolulu, HI
NASA Office of Education	Washington, DC
Ohio State University	Columbus, OH
Pahoa Elementary School	Pahoa, HI
Saint Louis School	Honolulu, HI
Subaru Telescope	Hilo, HI

University of Vienna
W.M. Keck Observatory

Wien, Austria
Kamuela, HI

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jan 03	30 Sep 03	University of Hawaii at Hilo	Hilo, HI	1308	491,180	0
16 Jun 03	11 Jul 03	Kamehameha Elementary School	Keaau, HI	101	0	0
16 Jun 03	25 Jul 03	University of Hawaii at Hilo	Hilo, HI	17	0	0

A51. New York City Space Science Research Alliance

Theme(s): SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: The New York City Space Science Research Alliance is a multi-campus research center based in the City University of New York (CUNY), which facilitates the involvement of underrepresented undergraduate students and faculty in NASA space science research and education. The Alliance is anchored by CUNY, the Hayden Planetarium of the American Museum of Natural History and the NASA Goddard Space Flight Center. The Alliance is a virtual space science department which has: (1) created a space science major in the CUNY BS degree program and created space science concentrations on 3 CUNY campuses; (2) developed 15 new courses and revised 6 courses in space science or related areas; (3) created research opportunities for students (16 at NASA sites such as GSFC, JPL, APL and many more within CUNY); (4) initiated faculty development by attending national conferences and attending/co-hosting image processing workshops at South Carolina State University, City College, Medgar Evers College and Holyoke Community College, MA; (5) enhanced existing research (evolution of galaxies, aerosols on Jupiter, photometry of Near-Earth Objects) and established new research (active galactic nuclei, micro-organism and planetary surfaces, RHESSI, asteroid detection and deflection) with an emphasis on recruiting community college faculty; (6) increased faculty and student presentations at national conferences (9 presentations); and (7) initiated recruitment activities with an open house and NASA GSFC student research symposium at the Hayden Planetarium. Other partners are the NASA Goddard Institute for Space Studies/Institute on Climate and Planets and the NASA Minority University Space Interdisciplinary Network. CUNY partners are: Medgar Evers College, the College of Staten Island and its Astrophysical Observatory, City College of NY, LaGuardia Community College, Queensborough Community College, Hunter College, York College, Hostos Community College, Borough of Manhattan Community College and external partner Holyoke Community College.

Lead: Dr. Leon Johnson, CUNY Medgar Evers College, Brooklyn, NY 11225. E-mail: lpjohnson99@cswebmail.com. Phone: 718-270-6454.

Primary URL: <http://nrtts.mec.cuny.edu/nycssra>

Scientist(s):	Dr. Shermane Austin	CUNY Medgar Evers College	Brooklyn, NY
	Dr. Tak Cheung	CUNY Queensborough Community College	Bayside, NY
	Dr. Donald Cotten	CUNY Queensborough Community College	Bayside, NY
	Dr. Brian Dennis	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Ifeanyi Ekejiuba	CUNY Medgar Evers College	Brooklyn, NY
	Mr. Bart Estes	Holyoke Community College	Holyoke, MA
	Dr. John Flowers	CUNY Medgar Evers College	Brooklyn, NY
	Dr. James Frost	CUNY LaGuardia Community College	Long Island, NY
	Dr. Steve Greenbaum	CUNY Hunter College	New York, NY
	Dr. James Harrington	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Leon Johnson	CUNY Medgar Evers College	Brooklyn, NY
	Dr. James Leary	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Charles Liu,	American Museum of Natural History	New York, NY
	Dr. Nancy Maynard	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Penny Morris-Smith	University of Houston-Downtown	Houston, TX
	Dr. Carolyn Narasimhan	DePaul University	Chicago, IL
	Mr. Irving Robbins	College of Staten Island	Staten Island, NY
	Mr. Keith Rowan	College of Staten Island	Staten Island, NY
	Dr. Jeffrey Steiner	CUNY City College of New York	New York, NY
	Dr. Shana Tribiano	CUNY Borough of Manhattan Community College	New York, NY
	Dr. Neil Tyson	American Museum of Natural History	New York, NY
	Dr. Donald Walter	South Carolina State University	Orangeburg, SC

Partner(s):	American Museum of Natural History	New York, NY
	College of Staten Island	Staten Island, NY
	CUNY Borough of Manhattan Community College	New York, NY
	CUNY City College of New York	New York, NY
	CUNY Hostos Community College	Bronx, NY
	CUNY Hunter College	New York, NY
	CUNY LaGuardia Community College	Long Island, NY
	CUNY Queensborough Community College	Bayside, NY
	CUNY York College	Jamaica, NY
	Holyoke Community College	Holyoke, MA
	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	NASA Goddard Institute for Space Studies	New York, NY
	NASA Goddard Space Flight Center	Greenbelt, MD
	NASA Office of Education	Washington, DC
	South Carolina State University	Orangeburg, SC

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	15 May 03	CUNY Medgar Evers College	Brooklyn, NY	13	0	0
07 Oct 02	09 Dec 02	College of Staten Island	Staten Island, NY	850	500	0
19 Nov 02	21 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	2	0	0
06 Dec 02	06 Dec 02	American Museum of Natural History	New York, NY	39	0	0
13 Jan 03	16 Jan 03	CUNY City College of New York	New York, NY	7	0	0
31 Jan 03	16 May 03	CUNY Medgar Evers College	Brooklyn, NY	8	0	0
10 Feb 03	12 May 03	College of Staten Island	Staten Island, NY	1,050	600	0
13 Feb 03	13 Feb 03	College of Staten Island	Staten Island, NY	0	5,000	0
08 Mar 03	08 Mar 03	CUNY Medgar Evers College	Brooklyn, NY	145	200	0
26 Mar 03	27 Mar 03	Holyoke Community College	Holyoke, MA	12	0	0
11 Apr 03	11 Apr 03	CUNY York College	Jamaica, NY	7	0	0
14 May 03	17 May 03	CUNY LaGuardia Community College	Long Island, NY	130	0	0
28 May 03	28 May 03	Wheeling Jesuit University	Wheeling, WV	20	0	0
28 May 03	28 May 03	Wheeling Jesuit University	Wheeling, WV	3	0	0
01 Jun 03	25 Jul 03	South Carolina State University	Orangeburg, SC	1	0	0
01 Jun 03	06 Aug 03	CUNY Medgar Evers College	Brooklyn, NY	15	0	0
01 Jun 03	08 Aug 03	Johns Hopkins Applied Physics Laboratory	Laurel, MD	8	0	0
01 Jun 03	08 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	3	0	0
01 Jun 03	08 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	1	0	0
18 Jun 03	20 Jun 03	Holyoke Community College	Holyoke, MA	9	0	0
25 Jun 03	25 Jun 03	CUNY Hunter College	New York, NY	5	0	0
28 Jul 03	29 Jul 03	CUNY Medgar Evers College	Brooklyn, NY	4	0	0
14 Aug 03	14 Aug 03	CUNY City College of New York	New York, NY	15	0	0
21 Aug 03	22 Aug 03	DePaul University	Chicago, IL	4	0	0
27 Aug 03	28 Aug 03	College of Staten Island	Staten Island, NY	625	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	0	0	0
03 Sep 03	03 Sep 03	CUNY LaGuardia Community College	Long Island, NY	20	0	0
05 Sep 03	05 Sep 03	College of Staten Island	Staten Island, NY	112	0	0
11 Sep 03	29 Sep 03	College of Staten Island	Staten Island, NY	250	500	0

A52. Partnerships in Astronomy and Astrophysics Education and Research at Southern University

Theme(s): SEC, SEU

Msn/Prgm: MI Initiative[B2]

Description: Southern University in Baton Rouge, LA, the main campus of the largest Historically Black College and University (HBCU) system in the country, continues to build upon and enhance its ongoing successful educational and research partnerships with the Smithsonian Astrophysical Observatory (SAO) in Cambridge, MA and neighboring Louisiana State University. These multi-faceted partnerships have significantly contributed to a major revitalization of the academic program in astronomy and astrophysics at Southern University. With SAO,

we expanded Southern student involvement in ongoing SOHO/UVCS research activities and will become a formal participant in the planning of future space missions, such as those associated with NASA's Living with a Star (LWS) program. With LSU, Southern continued to increase its involvement in the development of the MARGIE X-ray/gamma-ray imaging experiment for high-energy astrophysics, leading up to its first balloon flight. We have also been incorporating a more formal academic component into our partnership programs, including curriculum development for an upper-level course in astrophysics for physics majors at Southern, as well as the implementation of a joint "capstone" course (the ACES project) between LSU and Southern to train students in laboratory techniques and experimental methods relevant to space science. Both collaborative partnership projects involve regular visits by LSU and SAO scientists to the Southern campus in Baton Rouge as part of a space-science lecture series to teach and mentor students, as well as reciprocal visits by qualified Southern students to LSU and SAO to work on joint research activities. Southern students and faculty continue to increase their involvement in the educational and public outreach activities associated with the Highland Road Park Observatory in Baton Rouge, in whose operation the University will soon become a formal partner.

Lead: Dr. J. Gregory Stacy, Southern University and A&M College, Baton Rouge, LA 70813. E-mail: gstacy@phys.subr.edu. Phone: 225-771-2831.

Primary URL: <http://www.phys.subr.edu>

2nd URL: <http://www.phys.subr.edu/timbuktu.htm>

Scientist(s):	Dr. Michael Cherry	Louisiana State University	Baton Rouge, LA
	Dr. Steve Cranmer	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Keith Gendreau	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. T. Gregory Guzik	Louisiana State University	Baton Rouge, LA
	Dr. John Kohl	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Jonathan Ormes	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. J. Gregory Stacy	Southern University and A&M College	Baton Rouge, LA
	Dr. Leonard Strachan	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Raid Suleiman	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. John Wefel	Louisiana State University	Baton Rouge, LA
Partner(s):	Harvard-Smithsonian Center for Astrophysics		Cambridge, MA
	Louisiana State University		Baton Rouge, LA
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Jan 02	23 Jan 02	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	25	0	0
02 Jun 02	25 Jul 02	NASA Goddard Space Flight Center	Greenbelt, MD	3	0	0
30 Jun 02	09 Aug 02	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	6	0	0
01 Oct 02	30 Sep 03	Louisiana State University	Baton Rouge, LA	6	0	0
01 Oct 02	30 Sep 03	Southern University and A&M College	Baton Rouge, LA	6	0	0
24 Oct 02	24 Oct 02	Louisiana State University	Baton Rouge, LA	65	0	0
27 Nov 02	27 Nov 02	Southern University and A&M College	Baton Rouge, LA	50	0	0
09 Dec 02	13 Dec 02	XXI Texas Symposium on Relativistic Astrophysics	Florence, Italy	150	0	0

A53. SMARTT: Scientists Mentoring Astronomy Research Teams of Tomorrow

Theme(s): ASO

Msn/Prgm: MI Initiative[B2]

Description: The Scientists Mentoring Astronomy Research Teams of Tomorrow (SMARTT) program has three main goals: (1) to create a small, focused, quality, and sustainable research capability at Pasadena City College (PCC) in infrared (IR) astronomy that is meaningful to students, faculty and the scientific community, and, in particular to apply for time on the Spitzer Space Telescope; (2) to use this newly acquired research capability to establish and strengthen the relationships among staff members at the participating institutions of the NASA Jet Propulsion Laboratory (JPL), the California Institute of Technology (Caltech), Spitzer Space Telescope, the Infrared Processing and Analysis Center (IPAC) at Caltech and the Griffith Observatory; and (3) to perform educational outreach and infrared astronomy research dissemination through construction of an IR exhibit at the Griffith Observatory, planetarium programs at Griffith Observatory and PCC, and through Native American educational events and tutoring programs. Due to multiple launch delays of the Spitzer Space Telescope spacecraft and extreme budget deficits in California, not all of the above goals could be achieved to the degree desired.

However, the primary objective of creating a sustainable research capability at PCC has been achieved. Through the opportunity created by this grant to work with NASA scientists, especially at JPL and Caltech, the scientific quality of the PCC faculty and staff have been markedly improved. This will in turn be passed on to thousands of students and hundreds of K–14 teachers who attend PCC programs in the years to come. The focus and direct support of urban Native American youth going into the sciences through mentoring programs has also been an important accomplishment. Finally, a primary objective for the Minority Institution Initiative program was to create links between minority institutions and NASA institutions that will continue after the granting period. This has been achieved.

Lead: Mr. John Sepikas, Pasadena City College, Pasadena, CA 91106. E-mail: jpssepikas@paccd.cc.ca.us. Phone: 626-585-7322.

Scientist(s):	Dr. Michael Werner	NASA Jet Propulsion Laboratory	Pasadena, CA
Partner(s):	California Institute of Technology		Pasadena, CA
	Griffith Observatory and Planetarium		Los Angeles, CA
	NASA Jet Propulsion Laboratory		Pasadena, CA
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB01
Oct 02	17 May 03	Pasadena City College	Pasadena, CA	72	0	0
01 Oct 02	29 Sep 03	Haramokngna American Indian Cultural Center	La Canada, CA	781	0	0
01 Oct 02	30 Sep 03	Tongva Youth Center	El Monte, CA	30	0	0
06 Oct 02	06 Oct 02	Pasadena City College	Pasadena, CA	36	0	0
20 Oct 02	20 Oct 02	Pasadena City College	Pasadena, CA	44	0	0
27 Oct 02	27 Oct 02	Pasadena City College	Pasadena, CA	40	0	0
03 Nov 02	03 Nov 02	Pasadena City College	Pasadena, CA	32	0	0
17 Nov 02	17 Nov 02	Pasadena City College	Pasadena, CA	33	0	0
24 Nov 02	24 Nov 02	Pasadena City College	Pasadena, CA	63	0	0
24 Nov 02	24 Nov 02	Paulucci Space Theater	Hibbing, MN	36	0	0
01 Dec 02	01 Dec 02	Pasadena City College	Pasadena, CA	66	0	0
08 Dec 02	08 Dec 02	Pasadena City College	Pasadena, CA	69	0	0
17 Dec 02	17 Dec 02	Pasadena City College	Pasadena, CA	65	0	0
15 Jan 03	15 Jan 03	Pasadena City College	Pasadena, CA	58	0	0
27 Jan 03	27 Jan 03	Pasadena City College	Pasadena, CA	75	0	0
03 Feb 03	03 Feb 03	Pasadena City College	Pasadena, CA	63	0	0
24 Feb 03	24 Feb 03	Pasadena City College	Pasadena, CA	72	0	0
26 Feb 03	26 Feb 03	Pasadena City College	Pasadena, CA	27	0	0
03 Mar 03	03 Mar 03	Pasadena City College	Pasadena, CA	67	0	0
10 Mar 03	10 Mar 03	Pasadena City College	Pasadena, CA	59	0	0
17 Mar 03	17 Mar 03	Pasadena City College	Pasadena, CA	51	0	0
19 Mar 03	19 Mar 03	Pasadena City College	Pasadena, CA	1	0	0
23 Mar 03	23 Mar 03	Pasadena City College	Pasadena, CA	67	0	0
24 Mar 03	24 Mar 03	Pasadena City College	Pasadena, CA	32	0	0
26 Mar 03	26 Mar 03	Pasadena City College	Pasadena, CA	104	0	0
09 Apr 03	09 Apr 03	Pasadena City College	Pasadena, CA	26	0	0
30 Apr 03	30 Apr 03	Pasadena City College	Pasadena, CA	68	0	0
01 May 03	04 May 03	Diné College	Shiprock, NM	40	0	0
07 May 03	07 May 03	Pasadena City College	Pasadena, CA	32	0	0
31 May 03	31 May 03	Pasadena City College	Pasadena, CA	15	0	0
23 Aug 03	27 Aug 03	NASA Kennedy Space Center	Kennedy Space Center, FL	7	0	0

A54. South-West Internet Program for the Enhancement of Minority Education

Theme(s): ASO, SEC, SEU

Msn/Prgm: MI Initiative[B2]

Description: South-West Internet Program for the Enhancement of Minority Education's Internet Based Education (IBE) has delivered the following: (1) a graphics-based, Internet-delivered, distance learning Astronomy lecture and laboratory course friendly to both Navajo and rural Hispanic students and targeted at freshmen and sophomore level non-science majors. (It is the distance learning option to Diné College's Astronomy 100 course and is

offered as Astronomy 101 at the University of New Mexico. IBE provides four credit hours that are fully transferable to other colleges and universities); (2) lectures offered in two different graphic formats to match professor and student preferences (the lecture is also offered to *en español* to serve rural Hispanic students); (3) an internet laboratory that relies strongly on graphics to present material (this is especially beneficial to students with limited skills in English; although the base language is English, some Spanish and Navajo with voice-overs is included; heavy use is made of animations, cartooning, videos and interactive activities such as click and drag pedagogy and homework); (4) lessons providing Internet links and resources for independent student research; (5) courses that work well with Navajo students of all ages and conform to national science standards; (6) student internet access to both virtual and real telescopes; (7) a mobile observatory with Internet links begins prototype testing in January 2004; (8) material that is classroom tested and has received high marks from independent reviewers; (9) a first, rough translation of the Internet Laboratory into Spanish; (10) on-line math tutorials, student Web mail, student folders and a public folder for announcements and chat; and (11) cultural elements that are identifiable by both Navajo and Hispanic students. IBE has brought the universe to the students and faculty of the otherwise resource-limited Diné College.

Contact: Mr. Robert Friedberg, Diné College, Shiprock, NM 87420. E-mail: bfrybread@yahoo.com. Phone: 505-368-3635.

Primary URL: <http://www.ibe.ncc.cc.nm.us>

2nd URL: <http://yoda.phys.unm.edu/ast199>

Partner(s): Los Alamos National Laboratory
NASA Office of Education
New Mexico Highlands University
University of California Berkeley
University of New Mexico

Los Alamos, NM
Washington, DC
Las Vegas, NM
Berkeley, CA
Albuquerque, NM

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
Mar 03	15 Mar 03	Earth Math	Windowrock, AZ	0	85	0
03 Sep 03	03 Sep 03	Diné College	Shiprock, NM	5	15	20

A55. Space Science Curriculum at Hampton University: Development of a Minor, Faculty-Enhancement, and K-14 Outreach

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: This NASA space science sponsored program has had a significant impact on Hampton University (HU) students and the local K-12 community. A curriculum in space science has been approved by the university and the first undergraduate courses have been offered. A space science seminar series was introduced in Summer 2003. Space scientist, Dr. Wayne Pryor joined the program in its second year and became principal investigator in the third year. Over the lifetime of this grant, three faculty members were involved in activities to expand and enhance faculty research at Hampton University. During FY 2003, Dr. Joseph Williams, Professor of Chemistry, along with HU students designed a series of measurements of hydrogen peroxide's spectrum to aid in interpreting spectra of Jupiter's moon from the Galileo spacecraft ultraviolet spectrometer. The K-14 outreach program has been directed by Dr. Arthur Bowman of the HU Biology department. Several HU undergraduate students have been trained and hired to introduce space science education to K-12 students. More than 1000 K-12 students have participated in E/PO activities during each of the program's 3 years.

Lead: Dr. M. Patrick McCormick, Hampton University, Hampton, VA 23668. E-mail: pat.mccormick@hampton.edu. Phone: 757-728-6867.

Scientist(s): Dr. Wayne Pryor
Partner(s): Cooperating Hampton Roads Organizations for Minorities in Engineering
NASA Jet Propulsion Laboratory
NASA Langley Research Center
NASA Office of Education
Norfolk State University
University of Colorado, Boulder
Virginia Air and Space Museum

Coolidge, AZ
Norfolk, VA
Pasadena, CA
Hampton, VA
Washington, DC
Norfolk, VA
Boulder, CO
Hampton, VA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	Norfolk State University	Norfolk, VA	8	0	0
02 Oct 02	02 Oct 02	Virginia Air and Space Museum	Hampton, VA	0	100	0
19 Nov 02	19 Nov 02	Hampton University	Hampton, VA	18	0	0
11 Feb 03	11 Feb 03	Cooperating Hampton Roads Organizations for Minorities in Engineering	Norfolk, VA	22	0	0
11 Feb 03	11 Feb 03	Hampton University	Hampton, VA	20	0	0
11 Feb 03	13 Feb 03	NASA Astrobiology Institute General Meeting	Tempe, AZ	30	0	0
12 Feb 03	12 Feb 03	Jones Magnet Middle School	Hampton, VA	50	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	32	0	0
08 Apr 03	08 Apr 03	Cooperating Hampton Roads Organizations for Minorities in Engineering	Norfolk, VA	22	0	0
05 May 03	07 May 03	Space Science Institute	Boulder, CO	30	0	0
02 Jun 03	02 Jun 03	Cooperating Hampton Roads Organizations for Minorities in Engineering	Norfolk, VA	24	0	0
05 Jul 03	05 Jul 03	Virginia Air and Space Museum	Hampton, VA	0	50	0
10 Jul 03	10 Jul 03	Hampton University	Hampton, VA	10	0	0
15 Jul 03	15 Jul 03	NASA Langley Research Center	Hampton, VA	200	0	0
17 Jul 03	17 Jul 03	Hampton University	Hampton, VA	33	0	0
19 Jul 03	19 Jul 03	Virginia Air and Space Museum	Hampton, VA	0	50	0
24 Jul 03	24 Jul 03	Hampton University	Hampton, VA	20	0	0

A56. Space Science Education and Sun-Earth Connection

Theme(s): SEC

Msn/Prgm: MI Initiative[B2]

Description: The objectives of this project are to: (1) initiate a B. S. degree program in physics with space science as concentration area; (2) train minority (especially, African-American) students for eventual careers in space science; (3) establish a space science research group at Alabama A&M University (AAMU) to conduct research in the space science area; and (4) establish partnerships with other institutions to further the goals of this project. The first objective has been completed and the remaining three objectives are continuing. Six African-American students have enrolled in the program thus far. Five new courses in space science areas were approved. Collaborative efforts are continuing with the University of Alabama in Huntsville, NASA Marshall Space Flight Center (MSFC), the National Space Science and Technology Center, Lawrence Livermore National Laboratory (LLNL), the University of Texas at El Paso, and Boston University. Advances in space weather prediction-related studies have been made, e.g. solar wind effects on geomagnetic storms, substorms and radiation belt formation, numerical simulation studies on coronal mass ejections, and climatological effects of a variable solar constant. A total of 8 research papers were submitted and 15 presentations were made at national conferences, several of which involved students. Four research proposals were funded by NASA, the Office of Naval Research, the Air Force Office of Scientific Research, and the National Science Foundation. Students received summer training at LLNL, Lawrence Berkely National Laboratory, MSFC, the University of Wisconsin at Madison, and Boston University.

Lead: Dr. Arjun Tan, Alabama A&M University, Normal, AL 35762. E-mail: atan@aamu.edu. Phone: 256-372-8115.

Scientist(s): Dr. Bala Govindasamy Lawrence Livermore National Laboratory Livermore, CA
 Dr. W. Lyatsky Alabama A&M University Normal, AL
 Dr. Arjun Tan Alabama A&M University Normal, AL

Partner(s): Lawrence Livermore National Laboratory Livermore, CA
 NASA Marshall Space Flight Center Huntsville, AL
 NASA Office of Education Washington, DC
 National Space Science and Technology Center Huntsville, AL
 University of Alabama at Huntsville Huntsville, AL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Dec 02	10 Dec 02	American Geophysical Union Fall Meeting	San Francisco, CA	2	0	0
0 Feb 03	15 Feb 03					

		National Society of Black Physicists and National Conference of Black Physics Students			
			Washington, DC	10	0
26 May 03	03 Jul 03	Lawrence Livermore National Laboratory	Livermore, CA	2	0

A57. Stars on Earth: Providing Underrepresented New Mexico High School Students with Research Experience in Space Science and Preparation for Math, Science, and Technology

Theme(s): SEC, SEU, SSE

Msn/Prgm: MI Initiative[B2]

Description: "Stars on Earth" is a year-round academic and research-based program opportunity for underrepresented students to build a solid foundation in earth and planetary sciences, mathematics, technology, and communications. Significant accomplishments in FY 2003 include: (1) Southwestern Indian Polytechnic Institute (SIPI) students collectively gained research techniques with the Institute of Meteoritics at the University of New Mexico; (2) there was an increase in SIPI students enrolled in space science courses developed through the NASA grant; (3) Physical Geology 101 and Astronomy 101, both with lab courses, were established in the SIPI catalogue; (4) continued resource support to Geology 101 and Astronomy 101 was provided, with field experiences; (5) SIPI students contributed to the 34th Lunar and Planetary Science Conference; (6) enrollment increased in Saturday Academy, the pre-college outreach objective; (7) the 6-week residential program continued, and students learned about earth, space, life, and environmental sciences via classes and experiential labs; developed research projects and presented findings at a poster session; and interacted with professionals in the fields; (8) an e-mentoring program was developed with the Bureau of Women, Department of Labor specifically for young women pursuing careers in the fields of science, mathematics, and technology.

Contact: Mr. Kirby Gchachu, Southwestern Indian Polytechnic Institute, Albuquerque, NM 87184. E-mail: kgchachu@siipi.bia.edu. Phone: 505-346-7712.

Primary URL: <http://www.siipi.bia.edu>

Partner(s): NASA Office of Education
University of New Mexico

Washington, DC
Albuquerque, NM

A58. York College Observatory Educational Outreach Program (YCOOP)

Theme(s): ASO, SEU, SSE

Msn/Prgm: MI Initiative[B2], TPF[B32], 2MASS[B35], WMAP[B79]

Description: YCOOP develops a broad program for upgrading science education in inner city areas. The program utilizes: (1) in-house capabilities, collaborating institutions and the internet to enhance the educational infrastructure at York College and the secondary schools of New York City; (2) sets up training for in-service secondary school science teachers; and (3) stimulates research in minority institutions. At York, curricula developments include: minors and courses in astronomy and physics for majors in sciences, teacher education, and general education, as well as for in-service high school teachers. NASA space science grant funding has strengthened the college's physics and astronomy programs by the addition of a new faculty line and by stimulating cooperative programs with the NASA MAP mission and Princeton University that have led to curricula developments and published research for York faculty and undergraduates. Collaboration with units of City University has strengthened the entire university's program in space sciences. Collaboration with the MAP mission and the SEMAA program is providing enrichment and outreach programs for underrepresented children. YCOOP is impacting the New York City high school program in earth and space sciences by offering faculty development and cooperatively creating curricula materials. Teacher resource material is published on the internet for remote access. After field-testing is completed, these materials will be made available to the entire city. In-service teacher-training courses have been created that offer background education and classroom activities for solar system astronomy and cosmology. These resource materials are available for these teachers and their associates through publication on the internet at the York College Web site. The "YCOOP Open House" outreach program, which includes lectures and sky viewing for college and local communities, reaches more than 300 people each year.

Lead: Dr. Martin Spergel, CUNY York College, Jamaica, NY 11451. E-mail: spergel@york.cuny.edu. Phone: 718-262-2650.

Primary URL: http://natsci.york.cuny.edu/yc_observatory.html

2nd URL: <http://natsci.york.cuny.edu/~yc>

Partner(s): American Museum of Natural History
CUNY City College of New York
CUNY Medgar Evers College

New York, NY
New York, NY
Brooklyn, NY

University Research Centers

A59. Center for Automated Space Science

Theme(s): ASO, SEC

Msn/Prgm: URC[B4]

Description: At the Tennessee State University (TSU) Center of Excellence in Information Systems, we have been developing the capability to make astronomical observations automatically with robotic telescopes and are currently operating seven 0.25-m to 0.80-m automatic photometric telescopes (APTs) and a new 2.0-m automatic spectroscopic telescope (AST), which is now operating routinely. We communicate with these telescopes via the Internet from TSU, uploading our observation requests and downloading the resulting data. The APTs produce the most precise measurements of long-term brightness changes in stars that have ever been made, while the AST is the first instrument in the world to acquire high-resolution stellar echelle spectra automatically. These telescopes operate with amazing efficiency and cost-effectiveness, collecting orders of magnitude more data than was possible with manual telescopes with far greater precision and reliability and at a tiny fraction of the cost. Exciting discoveries have been made with these automated systems. In 1999, one of the telescopes detected the first, and so far only, confirmed example of a transiting extrasolar planet. This discovery proved once and for all that planetary systems around other stars actually exist by providing the first direct measurements of the true mass, radius, and mean density of one of these planets. In early 2002, the results of a 15-year study of the solar-type star 55 Cancri were announced in collaboration with colleagues at the University of California, Berkeley, and the Carnegie Institution of Washington. This study revealed one of the first planetary systems around another star that might be capable of hosting an Earth-like planet, although such small planets are still beyond our ability to detect if they exist. In 2003, our APT observations helped to prove the existence of the smallest mass extrasolar planet yet found, an object less than half the mass of Saturn in orbit around the G5 V star HD 49674. One of the astounding results of this search for planets around other stars is the realization that planetary systems similar to our own, capable of supporting advanced life, might be quite rare in the Universe. Another long-term research program with our robotic telescopes is the measurement of subtle long-term brightness changes in several hundred stars similar to our own Sun, ultimately aimed at understanding the Sun's changing behavior and its impact on Earth's climate. A new result from this program is the demonstration that, contrary to conventional wisdom of the past decade, the Sun's brightness changes are of comparable magnitude to other similar stars, providing confidence that the study of solar-type stars can teach us about the Sun's long-term behavior.

Lead: Dr. Michael Busby, Tennessee State University, Nashville, TN 37203-3401. E-mail: busby@coe.tsuniv.edu.
 Phone: 615-963-7013.

Partner(s): NASA Office of Education

Washington, DC

A60. Center for Gravitational Wave Astronomy

Theme(s): SEU

Msn/Prgm: URC[B4], LISA[B70]

Description: The University of Texas at Brownsville (UTB) Center for Gravitational Wave Astronomy (CGWA) will train a new generation of scientists to work at the intersection of gravitational wave data analysis, astrophysics, and numerical relativity. A number of large-scale interferometric gravitational wave detectors (LIGO, Virgo, GEO-600, TAMA-300) have recently been completed, and have begun taking scientific data. Spaced-based detectors are also planned for the near future, with the launch of the Laser Interferometer Space Antenna (LISA), a joint NASA-European Space Agency mission scheduled for 2010. These interferometers, together with the existing group of resonant bar detectors, will form a network of gravitational wave antennae capable of detecting black-hole and/or neutron star binary systems out to the edge of the observable Universe up to two times per year, as well as the remnant gravitational waves produced fractions of a second after the big-bang. By viewing the universe in gravitational waves, scientists will be able to directly observe events like black hole collisions that are hidden from conventional electromagnetic-based astronomy. The post-doctoral assistants, graduate and undergraduate students at the UTB CGWA will acquire a unique and valuable set of skills and will be placed squarely at the forefront of what will be the most exciting development in gravitational physics in our lifetimes. Furthermore, research within the Center will have a direct socioeconomic impact on a traditionally underrepresented population in the physical sciences. UTB is a minority-serving institution, with 90

percent Hispanic enrollment. Being situated on the Mexican border, most of the students are Mexican (living in Mexico) or have Mexican heritage.

Lead: Dr. Mario Diaz, The University of Texas at Brownsville, Brownsville, TX 78520. E-mail: mdiaz@utb.edu. Phone: (956) 574-6990.

Partner(s):	California Institute of Technology	Pasadena, CA
	NASA Goddard Space Flight Center	Greenbelt, MD
	NASA Office of Education	Washington, DC
	Pennsylvania State University	University Park, PA

Other Targeted Activities

A61. Deep Space Network Minority Outreach

Theme(s): SSE

Msn/Prgm: Deep Impact[B51], Stardust[B56], DSMS[B59]

Description: The Deep Space Network brings displays, presentations, or materials to underrepresented groups. The Native American program listed under this activity is the last in the "Sun to the Star Nations" program that has been supported for several years.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s):	Mr. Jim Klemaszewski	Arizona State University	Tempe, AZ
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Partner(s):	Academic Research Lab	Phoenix, AZ
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Jan 03	09 Jan 03	Pinon Unified School District	Pinon, AZ	936	0	0
30 Mar 03	30 Mar 03	Celebra La Ciencia Latino Festival	Los Angeles, CA	0	0	0

A62. Electromagnetic Radiation, Astronomy, and SOFIA (for Blind/Visually Impaired Students)

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: This activity was a field trip for blind and visually impaired students to the University of Chicago's Yerkes Observatory in Williams Bay, Wisconsin. The trip includes a kinesthetic tour of telescopes, CCD equipment, and observatory functions such as dome and floor motions, as well as the building of light detectors from the active astronomy kits. Students use infrared emitters from TV remotes to activate their detectors and sense the detection through the speaker-amplifier in the circuit. Presenters explain that infrared light is invisible to everyone and that the work of the engineers and astronomers working on SOFIA is to build detectors sensitive to infrared wavelengths of light and then figure out ways to represent the light detected so humans can study and interpret it. Students feel the model of the SOFIA aircraft and the opening of the telescope and dialog about doing astronomy aboard an aircraft.

Lead: Ms. Vivian Hoette, Yerkes Observatory, Williams Bay, WI 53191. E-mail: vhoette@yerkes.uchicago.edu. Phone: 262-245-5555.

Primary URL: <http://astro.uchicago.edu/yerkes/outreach>

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. Kyle Cudworth	University of Chicago	Chicago, IL
	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette, Yerkes Observatory		Williams Bay, WI
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	DePaul University		Chicago, IL
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Jun 03	12 Jun 03	Yerkes Observatory	Williams Bay, WI	29	0	0

A63. "Exceptional Space Science Materials for Exceptional Students" Workshop

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], DePaul B/F[B15], SERCH B/F[B19]

Description: The purpose of the "Exceptional Space Science Materials for Exceptional Students" workshop is to: (1) familiarize developers of NASA space science education materials with the diversity of exceptional classroom and audience needs; (2) familiarize educators of exceptional students with the wide variety of standards-based space science educational support materials available from NASA; (3) evaluate several popular classroom materials from different OSS themes for use in exceptional education settings; and (4) build a communication and support network of exceptional educators and NASA mission-related personnel. The goals are to: (1) provide educators of exceptional students with exciting new resources to use in formal and informal settings, as well as some experience in using them; (2) provide recommendations for modifications and future design issues to developers of NASA mission-related educational products so that they are readily useable by exceptional audiences; (3) continue developing a handbook of best practices for use in other workshops and educational settings for members of the NASA Space Science Education Support Network; and (4) form the nexus of a network of educators and product developers who will continue to work together to raise awareness of Exceptional Needs educational materials and be part of an extended advisory network for NASA missions and the Office of Education. The format of this activity allows presenters and participants to share their knowledge and professional experiences through short presentations, interactive activities, and group discussions. Participants are encouraged to simulate a variety of disabilities using visual impairment goggles, hearing impairment simulators, and other materials and devices to simulate physical disabilities. Discussions regarding learning disabilities such as ADD and ADHD are held throughout the workshop.

Lead: Dr. Cassandra Runyon, College of Charleston, Charleston, SC 29424. E-mail: cass@cofc.edu. Phone: 843-953-8279.

Contact: Ms. Kathryn Guimond, College of Charleston, Charleston, SC 29424. E-mail: serch@cofc.edu. Phone: 843-953-5437.

Primary URL: <http://serch.cofc.edu/serch>

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. J. David Bohlin	NASA Office of Space Science	Washington, DC
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Kathryn Guimond	College of Charleston	Charleston, SC
	Ms. Linda Knisely	Space Telescope Science Institute	Baltimore, MD
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Shannon McConnell	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Ruth Paglierani	University of California Berkeley	Berkeley, CA
	Dr. Cassandra Runyon	College of Charleston	Charleston, SC
	Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
	Ms. Stephanie Stockman	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Alice Wesson	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Feb 03	08 Feb 03	DePaul University	Chicago, IL	0	75	0
27 Jul 03	31 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	37	0	0

A64. "Exceptional Space Science Materials for Exceptional Students": Follow-up Workshops

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: Regional special needs educators who attended the "Exceptional Space Science Materials for Exceptional Students" workshop (hosted by the SERCH B/F) held informational sessions and working meetings for colleagues within their state.

Lead: Dr. Cassandra Runyon, College of Charleston, Charleston, SC 29424. E-mail: cass@cofc.edu. Phone: 843-953-8279.

Primary URL: <http://serch.cofc.edu/serch>

Partner(s):	Alabama Space Grant	Huntsville, AL
	Arkansas Space Grant	Little Rock, AR
	Florida Space Grant	Kennedy Space Center, FL
	Maryland Space Grant Consortium	Baltimore, MD

Mississippi Space Grant Consortium
 NASA Office of Education
 North Carolina Space Grant
 Puerto Rico Space Grant
 South Carolina Space Grant Consortium
 Tennessee Space Grant Consortium
 Virginia Space Grant Consortium

University, MS
 Washington, DC
 Raleigh, NC
 San Juan, PR
 Charleston, SC
 Nashville, TN
 Hampton, VA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Oct 02	18 Oct 02	Maryland Science Teachers Association Conference				
			Baltimore, MD	0	30	0
13 Nov 02	14 Nov 02	North Carolina Science Teachers Association	Greensboro, NC	0	21	0
21 Nov 02	23 Nov 02	Tennessee Science Teachers Association Annual Convention				
			Franklin, TN	7	0	0
07 Feb 03	07 Feb 03	Virginia Space Grant Consortium	Hampton, VA	0	45	0

A65. Girl Scouts of the USA/NASA Collaboration

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: OSS/Outreach[B7], Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], SSI B/F[B20], S2N2 B/F[B21], HST[B22], SST[B25], SOFIA[B26], Navigator[B27], KECK[B28], SIM[B31], TPF[B32], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], MGS[B43], Deep Impact[B51], Astromaterials Program[B57], DS1[B58], DSMS[B59], Ulysses[B89], Voyager[B90]

Description: On March 11, 2003 on behalf of the NASA Space Science E/PO Program, NASA Jet Propulsion Laboratory established an agreement with the Girl Scouts of the USA (GSUSA) to collaborate in all areas of space science content. The goals of the NASA GSUSA collaboration are to: (1) Inspire and motivate girls and women to pursue careers in science, technology, engineering, and mathematics; and (2) Engage girls and women in the experience of exploration and discovery while improving their science literacy with the goal of making science comfortable and fun for the girl scouts and their adult trainers, leaders, and volunteers. This collaborative effort includes providing content for existing and newly created GSUSA programs, including "Leader" magazine articles, workshops, Web site content, space books and booklets, and patch programs. Listed below are collaborative events.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Ms. Elizabeth Amini	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Rosalie Bettrue	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Nathan James	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Rhonda Jones	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Rosaly Lopes	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Jo Pitesky	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Arnie Schwartz	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Jenny Tieu	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Ann Werhle	NASA Jet Propulsion Laboratory	Pasadena, CA

Partner(s):	Arizona State University	Tempe, AZ
	Girl Scouts of the USA, National Headquarters	New York, NY
	Girl Scouts, Mile Hi Council	Denver, CO
	NASA Johnson Space Center	Houston, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Girls Inc. Regional Conference	Phoenix, AZ	15	0	0
05 Oct 02	05 Oct 02	Girl Scouts of the Huron Valley Council	Ann Arbor, MI	20	0	0

05 Oct 02	05 Oct 02	Girl Scouts of the Huron Valley Council	Ann Arbor, MI	25	0	0
05 Oct 02	05 Oct 02	Greenbelt National Park	Greenbelt, MD	0	1,000	0
06 Oct 02	06 Oct 02	Girl Scouts of the Huron Valley Council	Ann Arbor, MI	29	0	0
11 Oct 02	13 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	30	0	0
15 Oct 02	21 Oct 02	Girl Scouts of the USA Convention	Long Beach, CA	0	13,000	0
18 Oct 02	18 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	16	0	0
26 Oct 02	26 Oct 02	Girl Scouts, Mile Hi Council	Denver, CO	10	0	0
02 Nov 02	02 Nov 02	Girl Scout Council of Southeast Louisiana	New Orleans, LA	5	0	0
02 Nov 02	02 Nov 02	Girl Scout Council of Southeast Louisiana	New Orleans, LA	20	0	0
02 Nov 02	02 Nov 02	Girl Scout Council of Southeast Louisiana	New Orleans, LA	20	0	0
16 Nov 02	16 Nov 02	Girl Scouts of Mount Wilson Council	Arcadia, CA	20	0	0
23 Nov 02	23 Nov 03	Young African American Women's Conference	Pasadena, CA	0	0	0
06 Feb 03	06 Feb 03	Girl Scouts of Mount Wilson Council	Arcadia, CA	20	0	0
29 Mar 03	29 Mar 03	California Institute of Technology	Pasadena, CA	0	64	0
05 Apr 03	05 Apr 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	1,000	0
13 May 03	13 May 03	University of Wyoming	Laramie, WY	0	450	0
28 May 03	31 May 03	Girl Scouts of the USA, Edith Macy Conference Center	Briarcliffe Manor, NY	35	0	0
29 May 03	29 May 03	Girl Scouts of the USA, Edith Macy Conference Center	Briarcliffe Manor, NY	42	0	0
30 May 03	30 May 03	Girl Scouts of the USA, Edith Macy Conference Center	Briarcliffe Manor, NY	42	0	0
01 Jun 03	01 Jun 03	Girl Scouts of Greater New York	New York, NY	480	0	0
29 Jul 03	30 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	60	0	0
05 Sep 03	05 Sep 03	Girl Scouts of Monterey Bay	Castroville, CA	10	0	0
06 Sep 03	06 Sep 03	Girl Scouts of Monterey Bay	Castroville, CA	30	0	0

A66. Journey through the Universe

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Challenger Center for Space Science Education[B6]

Description: The Challenger Center's Journey through the Universe is an initiative to establish a national network of underserved communities committed to sustainable community-wide science, mathematics, and technology education. Funded by grants from NASA's Minority University Research and Education Programs and the Offices of Space Flight, Space Science, and Earth Science, Journey through the Universe uses research disciplines across all five NASA Enterprises to engage entire communities. The Challenger Center provides diverse resources to Journey communities nationwide, including local programs for students and families, K-12 curriculum support materials and educator training, and ongoing support from staff scientists and educators in both content and pedagogy. Communities integrate these resources into their existing science, mathematics, and technology education programming in both formal and informal education venues. Programming resulting from this partnership reflects the strengths of the community and provides access to resources otherwise unavailable. The initiative includes a week-long celebration of learning (Journey Week) involving a national team of researchers and engineers representing a wide range of NASA-affiliated organizations. During the week, training is provided for up to 350 K-12 educators, 4,000-8,000 K-12 students are visited in classrooms, and several Family Science Nights are held, with 300-1,000 participants each night. Journey reaches communities with limited space flight and Earth and space science education resources, as well as those whose resources are not utilized community-wide. This includes but is not limited to communities in rural settings and low-income populations in urban settings. The current network includes: Nogales, AZ; Tuskegee, AL; Washington, D.C.; Labette County, KS; Kansas City, KS/MO; Marquette, MI; Dickinson-Iron-Menominee, MI; Moscow, ID; Muncie, IN; and Broken Arrow, OK. Martinsville, VA and Toledo, OH are scheduled to participate in 2003.

Lead: Dr. Jeffrey Goldstein, Challenger Center for Space Science Education, Alexandria, VA 22314. E-mail: journey@challenger.org. Phone: 703-683-9740.

Contact: Ms. Stacy Smith, Challenger Center for Space Science Education, Alexandria, VA 22314. E-mail: journey@challenger.org. Phone: 703-683-9740.

Primary URL: <http://www.challenger.org/journey>

2nd URL: <http://www.challenger.org>

Scientist(s): Dr. Matthew Bobrowsky Challenger Center for Space Science Education Alexandria, VA

Dr. Steve Brody	NASA Office of Space Science	Washington, DC
Dr. Scott Budzein	Naval Research Laboratory	Washington, DC
Dr. George Carruthers	Naval Research Laboratory	Washington, DC
Mr. Dennis Christopher	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Carol Jo Crannell	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Charles Dobson	Howard University	Washington, DC
Dr. Rob Epple	Swales Aerospace	Beltsville, MD
Dr. Aprille Ericsson	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Brad Files	NASA Johnson Space Center	Houston, TX
Dr. Harold Geller	George Mason University	Fairfax, VA
Dr. Jeffrey Goldstein	Challenger Center for Space Science Education	Alexandria, VA
Dr. Kevin Grazier	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. James Harrington	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Eric Holmes	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Nathan James	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Michael Johnson	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Andrew Johnston	Smithsonian National Air and Space Museum	Washington, DC
Dr. Margo Kingston	U.S. Geological Survey	Flagstaff, AZ
Dr. Therese Kucera	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Edward Landa	U.S. Geological Survey	Flagstaff, AZ
Dr. Timothy Livengood	Challenger Center for Space Science Education	Alexandria, VA
Ms. Cathy Long	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Rosemary Millham	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Vernon Morris	Howard University	Washington, DC
Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Agnes Pasco-Conaty	Challenger Center for Space Science Education	Alexandria, VA
Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Nancy Grace Roman	Retired, DF	
Dr. Paul Romani	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Tom Russell	ITT Industries	Asburn, VA
Mr. Andrew Santo	Johns Hopkins Applied Physics Laboratory	Laurel, MD
Dr. Sonya Smith	Howard University	Washington, DC
Mr. Vern Smith	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Tom Troland	University of Kentucky	Lexington, KY
Dr. Harri Vanhala	Challenger Center for Space Science Education	Alexandria, VA
Dr. Robin Vaughan	Johns Hopkins University	Baltimore, MD
Dr. Andrew Wald	Science Applications International Corporation	Washington, DC
Ms. Terriann Whittington	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
Oct 02	25 Oct 02	Journey through the Universe Week	Washington, DC	7,265	30,000	0
21 Feb 03	28 Feb 03	Journey through the Universe Week	San Diego, CA	12,203	100,440	0
16 Mar 03	21 Mar 03	Journey through the Universe Week	Marquette, MI	3495	25,320	0
27 Apr 03	02 May 03	Journey through the Universe Week	Labette County, KS	3,510	21,000	0

A67. Kepler Cam: Providing Planet-Finding Hardware and Data Techniques to Minority Colleges and Universities

Theme(s): ASO

Msn/Prgm: Kepler[B24]

Description: Kepler Cam is an initiative that involved education and public outreach as well as technology transfer. The initiative is converting excess CCD chips from the Kepler mission into CCD cameras that will be used at minority colleges and universities. Training in use of the cameras and data analysis in the style of the Kepler planet-finding effort is also provided.

Lead: Mr. Alan Gould, Lawrence Hall of Science, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.

Primary URL: <http://www.lawrencehallofscience.org/kepler>

Scientist(s): Dr. Jon Jenkins, NASA Ames Research Center

Moffett Field, CA

Partner(s): Western Kentucky University

Bowling Green, KY

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	18	0	0

A68. NASA Astrobiology Institute (NAI) Research Sabbaticals for Minority Institutions

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: NAI offers a program for faculty at certified minority institutions to participate in research sabbaticals in astrobiology at NAI lead team sites. The Minority Institution Research Sabbatical (MIRS) is open to faculty at certified minority institutions and aims to support collaborations in astrobiology which will lead to joint research proposals that are successful in peer review competitions. The program began in 2002 and has created four scientific collaborations to date. Successful applications have been received from Tennessee State University, Florida A & M University, and Howard University. The program also allows students at the schools of participating faculty members to attend astrobiology science meetings and become more familiar with the field of astrobiology. Applications are accepted year-round, and host sites are currently available in a range of disciplines.

Contact: Ms. Karen Bradford, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kbradford@mail.arc.nasa.gov.

Primary URL: <http://nai.arc.nasa.gov/institute/miSabbatical.cfm>

A69. NASA Astrobiology Institute/Johnson Space Center: Minority and Underrepresented Education and Public Outreach

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34], Astromaterials Program[B57]

Description: The education team of the NAI Institute for the Study of Biomarkers in Astromaterials at NASA Johnson Space Center conducts a number of workshops and career events focused on minority or underrepresented students and the adults who lead or teach them. We share hands-on astrobiology activities, reading materials, and career guidance about becoming an astrobiologist. Some of the events are part of larger space science-related workshops.

Contact: Ms. Jaclyn Allen, Lockheed Martin Corporation, Houston, TX 77058. E-mail: jaclyn.s.allen1@jsc.nasa.gov. Phone: 281-483-7389.

A70. NASA Astrobiology Institute/Penn State University: Women In Science and Engineering Research (WISER)

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: Faculty members from the Penn State Astrobiology Research Center participate in this two-semester research internship program, which is sponsored by the Pennsylvania Space Grant Consortium. The program is designed to retain women students in the science and engineering fields by providing first-year students with research experience and mentoring at the critical early stages of their undergraduate career. Students begin their research in the spring semester and continue during either the subsequent summer or fall semester. Since the program began in 1994, 393 women students have been hosted by 80 faculty members from the science and engineering colleges at Penn State.

Contact: Dr. Lisa Brown, Pennsylvania State University, University Park, PA 16802. E-mail: lisabrown@psu.edu.

Primary URL: <http://www.psu.edu/spacegrant/wiser>

A71. NASA Astrobiology Institute/ University of Washington: Astrobiology on the School Front—Interning and Mentoring

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: As part of an icebreaking expedition in the fall of 2002 conducted by the Canadian Arctic Shelf Exchange

Study (CASES) and supported by the U.S. National Oceanic and Atmospheric Administration (NOAA), Oceanographer Jody Deming worked with native Intuit high school students who were onboard to participate in research activities with scientists. Deming has also been asked to serve as chief scientist for 6 weeks as part of another CASES wintering expedition on the Mackenzie Continental Shelf in the Arctic Ocean. Deming will oversee the activities of a program called "Schools on Board", whereby a group of 12 high school students and their teachers, as well as 3 documentary filmmakers, will be onboard for one week to directly experience the working life and discoveries of research scientists working in the extreme Arctic environment. Particular focus will be given to astrobiology research and concepts.

Contact: Dr. Woody Sullivan, University of Washington, Seattle, WA 98195. E-mail: woody@astro.washington.edu.

A72. National Society of Black Physicists Annual Convention

Theme(s): ASO, SEC, SSE

Msn/Prgm: IDEAS[B1], URC[B4], OSS/Outreach[B7], Sun-Earth Connection (SEC) Forum[B14], MARSSB[B17], IMAGE[B100], RHESSI[B102], SOHO[B112]

Description: This activity involved coordinated efforts across several NASA groups. Planning activities included coordinating the availability and set-up of the Space Science Profiles exhibit at the National Society of Black Physicists Annual Conference. A variety of NASA Space Science materials were provided at the conference, including Sun-Earth Day materials featuring the Reuven Ramaty High Energy Solar Spectroscopic Imager (RHESSI), Sun-Earth Connection Education Forum (SECEF) solar disks, Hubble posters provided by the Space Telescope Science Institute (STSCI), and information about NASA-sponsored minority initiatives. The exhibit was provided with collaboration from the NASA Offices of Education and Space Science, financial support was provided by the Mid-Atlantic Region Space Science Broker (MARSSB).

Lead: Dr. Keith Jackson, National Society of Black Physicists, Arlington, VA 22205. E-mail: president@nsbp.org. Phone: 703-536-4207.

Contact: Mr. Tony Docal, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: ossbroker@cet.edu. Phone: 304-243-2480.

Primary URL: <http://www.nasa.gov>

2nd URL: <http://spacescience.nasa.gov>

Partner(s): NASA Glenn Research Center
NASA Office of Education
NASA Office of Space Science
Ohio Space Grant Consortium
Space Telescope Science Institute

Cleveland, OH
Washington, DC
Washington, DC
Cleveland, OH
Baltimore, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Feb 03	15 Feb 03	Conference of the National Society of Black Physicists and Black Physics Students		55	200	0
			Atlanta, GA			

A73. Navigator Research Experiences for Minorities

Theme(s): ASO

Msn/Prgm: Navigator[B27]

Description: Navigator is investing in a 3-year pilot program that has two components: (1) an 8-week summer research program based at the University of Tennessee designed to expose undergraduate math, science and engineering students to advanced science research while exposing them to NASA career opportunities, and (2) the development of an online astronomy course intended to enhance space science education within the Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal College communities. Both the research opportunities, and the online course will be systematically expanded over time through the addition of other partner institutions.

Lead: Ms. Rhonda Jones, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rhonda.R.Jones@jpl.nasa.gov. Phone: 818-354-1562.

Primary URL: <http://planetquest.jpl.nasa.gov>

2nd URL: <http://www.tnstate.edu>

Scientist(s):	Dr. Richard Alvidrez	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Joseph Catanzarite	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Rudolf Danner	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Rhonda Jones	NASA Jet Propulsion Laboratory	Pasadena, CA

Partner(s): Dr. Gerard Van Belle NASA Jet Propulsion Laboratory Pasadena, CA
 Tennessee State University Nashville, TN
 Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
Jan 03	30 Jan 03	California State University, Los Angeles	Los Angeles, CA	0	14	0
10 Apr 03	10 Apr 03	Tennessee State University	Nashville, TN	30	10	0
21 Jul 03	25 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	9	0	0

A74. Outreach to Native Americans in the Western Region

Theme(s): SEC, SSE

Msn/Prgm: SSI B/F[B20]

Description: One of the primary goals of the Broker/Facilitator program at the Space Science Institute (SSI) is to provide strategically valuable support for indigenous communities in our region. This strategic support includes providing professional development opportunities in space science for educators of Native American students; facilitating the development of, access to, and use of exemplary curricular materials appropriate for indigenous communities; providing awareness training for NASA scientists and educators who will be working in Native American communities; and facilitating Native American access to the process and results of space science research. The SSI Broker works to provide these services while using guiding principles which include respect for spiritual and cultural values; mindfulness of indigenous knowledge and perspective; approval of elders and community members; and engagement of Native American educators or consultants in each step of the process. This year the SSI Broker worked to provide astronomy workshops at four conferences targeting Native American students and educators in Arizona, North Dakota, and South Dakota. Additionally, the SSI Broker continues to support the World Hope Foundation's Space Science for Seven Generations program, a 3-year program funded by the Kellogg Foundation intended to create a sustainable, authentic, culturally relevant space science education presence within Native American communities. The SSI Broker hopes to continue making progress in building mutually respectful relationships that ensure the sustainability and success of NASA E/PO programs in indigenous communities.

Contact: Ms. Christy Edwards, Space Science Institute, Boulder, CO 80301. E-mail: edwardcl@colorado.edu. Phone: 720-974-5824.

Scientist(s):	Mr. Jessie Antonellis	University of Arizona	Tucson, AZ
	Ms. Christy Edwards	Space Science Institute	Boulder, CO
	Mr. Jim Klemaszewski	Arizona State University	Tempe, AZ
	Dr. Nancy Maryboy	Diné College	Tsaile, AZ
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
Partner(s):	Natives, Africans, Asians, Latinos(as), and Allies of AEE		Boulder, CO
	Pinon Unified School District		Pinon, AZ
	United Tribes Technical College		Bismarck, ND
	University of Arizona		Tucson, AZ
	World Hope Foundation		Boulder, CO

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
Mar 03	13 Mar 03	Pinon Unified School District	Pinon, AZ	15	0	0
14 Jun 03	14 Jun 03	Northern Arizona University	Flagstaff, AZ	11	0	0
23 Jun 03	27 Jun 03	Natives, Africans, Asians, Latinos(as) and Allies of the Association for Experimental Education Conference	Mission, SD	0	175	0
23 Jul 03	24 Jul 03	United Tribes Technical College	Bismarck, ND	41	0	0

A75. Professional Societies of Minority Scientists/OSS Collaboration

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: OSS/Outreach[B7], Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], DePaul B/F[B15], LPI B/F[B16], MARSSB[B17], NESSIE B/F[B18], SERCH B/F[B19], SSI B/F[B20], S2N2 B/F[B21]

Description: A network of professional societies of minority scientists is working with the NASA Office of Space Science (OSS) in order to broaden the diversity of participants in OSS missions and education and public outreach (E/PO) projects and improve the effectiveness of OSS support for the activities of the professional societies. An

emphasis is place on engaging society members as consultants and partners and on establishing collaborations early in the planning process for major activities or programs. In 2002–2003, OSS had an enhanced presence at the annual meetings of the Society for Advancement of Chicanos and Native Americans in Science, the American Indian Science and Engineering Society, and the National Organization of Black Chemists and Chemical Engineers.

Lead: Dr. Philip Sakimoto, NASA Office of Space Science, Washington, DC 20546 E-mail: phil.sakimoto@hq.nasa.gov. Phone: 202-358-0949.

Partner(s):	American Indian Science and Engineering Society	Albuquerque, NM
	Coalition to Diversify Computing	Evanston, IL
	Council for African American Researchers in the Mathematical Sciences	Buffalo, NY
	Institute for African American e-Culture	Boston, MA
	National Association of Black Geologists and Geophysicists	Houston, TX
	National Association of Mathematicians	Atlanta, GA
	National Organization for the Professional Advancement of Black Chemist and Chemical Engineers	Washington, DC
	National Society of Black Physicists	Arlington, VA
	National Society of Hispanic Physicists	Nashville, TN
	Society for the Advancement of Chicanos and Native Americans in Science	Santa Cruz, CA

A76. Space Science for the Visually Impaired

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: DePaul B/F[B15], NESSIE B/F[B18], SERCH B/F[B19], SOFIA[B26]

Description: The main goal of this activity is to contribute to the training, involvement, and broad understanding of the blind and visually impaired in space science. Our main partners are the National Federation of the Blind, the Wisconsin Center for the Blind and Visually Impaired (which is part of the Wisconsin Department of Public Instruction), and the National Organization of Parents of Blind Children. The activity is part of NASA's overall effort to enhance the participation of people with disabilities in space science through the Special Needs Resource Group (SNRG).

Lead: Dr. Bernhard Beck-Winchatz, DePaul University, Chicago, IL 60604. E-mail: bbeckwin@depaul.edu. Phone: 773-325-4545.

Primary URL: <http://www.nfb.org>

2nd URL: <http://www.wcbvi.k12.wi.us>

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. Kyle Cudworth	University of Chicago	Chicago, IL
	Ms. Noreen Grice	Museum of Science	Boston, MA
	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Dr. James Sweitzer	DePaul University	Chicago, IL
Partner(s):	National Federation of the Blind	Baltimore, MD	
	University of Chicago	Chicago, IL	
	Wisconsin Center for the Blind and Visually Impaired	Janesville, WI	

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Nov 02	21 Nov 02	DePaul University	Chicago, IL	33	1,100,000	0
29 Mar 03	29 Mar 03	American Association of Physics Teachers - Chicago Section Spring Meeting				
			Chicago, IL	34	0	0
12 Jun 03	12 Jun 03	Yerkes Observatory	Williams Bay, WI	21	5,000	0
23 Jun 03	28 Jun 03	Hands-On Universe Teacher Resource Agent Conference				
			Williams Bay, WI	37	0	0
28 Jun 03	04 Jul 03	National Federation of the Blind Convention	Louisville, KY	200	50,000	0

A77. Special Needs Resource Group

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Sun-Earth Connection (SEC) Forum[B14], SERCH B/F[B19]

Description: The purpose of the Special Needs Resource Group (SNRG, pronounced "synergy") is to provide NASA space science mission planners, principle investigators, and product developers with guidance, support, and product enhancement strategies to improve the usability of NASA products by audiences concerned with the education

of individuals with special needs. SNRG was developed by those who attended the SERCH "Exceptional Space Science Materials for Exceptional Students II" workshop in June 2002. SNRG is made up of 19 educators, scientists, and OSS support network representatives from AR, AZ, CA, MD, MS, NC, PA, SC, TN, and VA. The objectives of SNRG are to: (1) raise a level of awareness for mission planners, principle investigators, and product developers about individuals with special needs; (2) form and maintain a network of educators, special needs experts and product developers who will continue to work together to raise awareness of special needs educational materials and provide assistance in OSS product modifications when required; (3) provide direction in the formative stages of OSS product development and provide modification strategies for those OSS products that have received 'exemplary status' from the OSS product review; (4) generate effective mechanisms for product modification, which will include: developing a network of special needs educators that may be utilized as beta-testers; establishing and maintaining communication and ties with special needs resource providers, professional societies and organizations (e.g., Council of Exceptional Children, American Foundation for the Blind); and developing a handbook of best practices for members of the NASA OSS Education Support Network; (5) provide professional development opportunities to OSS scientists and educational specialists; and (6) provide an informational Web site.

Lead: Dr. Cassandra Runyon, College of Charleston, Charleston, SC 29424. E-mail: cass@cofc.edu. Phone: 843-953-8279.

Contact: Ms. Kathryn Guimond, College of Charleston, Charleston, SC 29424. E-mail: serch@cofc.edu. Phone: 843-953-5437.

Primary URL: <http://serch.cofc.edu/serch/special/snrg.htm>

A78. Students United with NASA Becoming Enthusiastic About Math and Science (SUNBEAMS)

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: RHESSI[B102]

Description: SUNBEAMS is an exciting and successful educational partnership between NASA's Goddard Space Flight Center and the District of Columbia Public Schools. The partnership continues to evolve as a model urban intervention program for grade-6 teachers and students that empowers teachers and inspires students with the process and excitement of space science and technology. Local teachers of grade-6 math and science are invited to come to Goddard for 5-week paid internships during the summer. They are each paired with a mentor from the Goddard scientific or technical staff. The teachers work with mentors in their professional work, much the same way that summer students do. In addition, the teachers are responsible for developing lesson plans that they pilot at their schools and post on the SUNBEAMS Web site. During the following school year, each SUNBEAMS teacher brings a class of up to 30 students to Goddard for a full week of immersion in math and science. The students also develop Web sites describing their experiences. After their week at Goddard, the students plan a family night at their school. The program for the evening is to share what they have learned and done with their families and other members of their community.

Lead: Dr. Carol Jo Crannell, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

crannell@gsfc.nasa.gov. Phone: 301-286-5007.

Contact: Dr. Carol Jo Crannell, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

crannell@gsfc.nasa.gov. Phone: 301-286-5007.

Primary URL: <http://space.gsfc.nasa.gov>

Scientist(s): Dr. Ronald Oliverson NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Jul 03	08 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	338	65	0

A79. Sun-Earth Connection Education Forum (SECEF) Targeted Outreach to Native Americans

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: SECEF partners with representatives of minority organizations to conduct targeted outreach to underserved/underutilized groups. Native American elders, teachers, and students partner with SECEF staff to collaborate on ways to increase awareness of the Native American cultures and understand scientific parallels.

Lead: Mr. Troy Cline, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: cline@mail630.gsfc.nasa.gov. Phone: 301-286-6606.

Contact: Dr. Greg Schultz, University of California, Berkeley, Berkeley, CA 94720. E-mail: schultz@ssl.berkeley.edu. Phone: 510-643-0012.

Primary URL: <http://sunearth.gsfc.nasa.gov/sunearthday/native.htm>

Scientist(s):	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Nov 02	10 Nov 03	American Indian Science and Engineering Society				
			Oklahoma City, OK	0	520	0
09 Apr 03	09 Apr 03	American Indian Public Charter School		10	25	0
			Oakland, CA			

A80. "To Mars with MER"—Brokered Partnership Programs

Theme(s): SSE

Msn/Prgm: DePaul B/F[B15], MER[B42]

Description: The overarching goal of this program is to maximize the participation of learners (both formal and informal) from major urban locations in Mars/MER missions. The program establishes partnerships between the relevant NASA programs, urban partners, and educators with "To Mars with MER". The program is not limited to promoting the MER missions, but also aims to increase the diffusion of other Mars-related programming to urban partners. There is a special focus on Chicago area participation, but the general group being targeted are informal science centers in major cities.

Lead: Dr. James Sweitzer, DePaul University, Chicago, IL 60604. E-mail: jsweitzer@depaul.edu. Phone: 773-325-4637.

Scientist(s):	Dr. Sherman Austin	CUNY Medgar Evers College	Brooklyn, NY
	Dr. Bernhard Beck-Winchatz,	DePaul University	Chicago, IL
	Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Lucy Fortson	Adler Planetarium and Astronomy Museum	Chicago, IL
	Mr. Charles Galindo	NASA Johnson Space Center	Houston, TX
	Dr. Jennifer Grier	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Leon Johnson	CUNY Medgar Evers College	Brooklyn, NY
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Dr. Wayne Lee	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Dr. Penny Morris-Smith	University of Houston-Downtown	Houston, TX
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Mr. Bill Nye	Cornell University	Ithaca, NY
	Dr. Patricia Reiff	Rice University	Houston, TX
	Dr. Doug Roberts	Adler Planetarium and Astronomy Museum	Chicago, IL
	Ms. Colleen Sharkey	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Anita Sohus	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. James Sweitzer	DePaul University	Chicago, IL
Partner(s):	Adler Planetarium and Astronomy Museum		Chicago, IL
	American Museum of Natural History		New York, NY
	CUNY Medgar Evers College		Brooklyn, NY
	Houston Museum of Natural Science		Houston, TX
	Museum of Science and Industry		Chicago, IL
	NASA Jet Propulsion Laboratory		Pasadena, CA
	Science Museum of Minnesota		St. Paul, MN
	St. Louis Science Center		St. Louis, MO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Feb 03	08 Feb 03	Challenger Learning Center of Northwest Indiana				
			Hammond, IN	0	34	0
17 Mar 03	17 Mar 03	Lunar and Planetary Institute		19	0	0
			Houston, TX			
01 May 03	01 May 03	DePaul University		337	0	0
			Chicago, IL			
21 Aug 03	22 Aug 03	DePaul University		41	0	0
			Chicago, IL			

EDUCATIONAL PRODUCTS

A81. Adventures In Space Science Mathematics

Theme(s): SEC
 Subject(s) Mathematics, Space Science
 Format(s) CD-ROM
 Grade(s) Grades 6–9
 Msn/Prgm: Office Of Space Science[B]
 Description: A collection of 21 math problem worksheets to support student masters of practical applications of basic math skills—negative numbers, averages, correlations, powers of 10 notation, maxima and minima, and reading to be informed. Includes student page and teacher answer key.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000856&mode=full>

A82. “Amazing Space” Capture the Cosmos

Theme(s): ASO
 Subject(s) Physical Science, Space Science
 Format(s) Web Site
 Grade(s) Grades K–12, General Public, Higher Education
 Msn/Prgm: HST[B22]
 Description: “Amazing Space” offers fun online activities designed to teach space science. Educational online games, reading material, downloadable trading cards, images and facts are available on this site. Topics include black holes, comets, light and color, galaxies, gravity, telescope history, the Hubble Space Telescope, the Solar System, and stellar evolution.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000866&mode=full>
 Scientist(s): Ms. Bonnie Eisenhamer Space Telescope Science Institute Baltimore, MD
 Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD

A83. “Amazing Space” Glossary

Theme(s): ASO
 Subject(s) Space Science
 Format(s) Web Site
 Grade(s) Grades K–12, General Public, Higher Education
 Msn/Prgm: HST[B22]
 Description: The “Amazing Space” Glossary is designed to sharpen your space science vocabulary. Definitions can be searched alphabetically by letter or by topic. Topics include astronomy, cosmology, galaxies, the Hubble Space Telescope, physics, comets, moons, planets and more.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000868&mode=full>
 Scientist(s): Ms. Bonnie Eisenhamer Space Telescope Science Institute Baltimore, MD
 Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD
 Mr. Dan McCallister Space Telescope Science Institute Baltimore, MD
 Dr. Mark Voit Space Telescope Science Institute Baltimore, MD

A84. “Amazing Space” Graphic Organizers

Theme(s): ASO
 Subject(s) Space Science
 Format(s) Web Site
 Grade(s) Grades 6–12

Msn/Prgm: HST[B22]
 Description: "Amazing Space" Graphic Organizers are visual tools that allow students to see both the details of a lesson and the bigger picture. These reference tools, illustrated with pictures taken by the Hubble Space Telescope, compare comets and asteroids, types of galaxies, and nebulae. Specific astronomical objects include the Eagle and Eskimo Nebulae; the Warped and Whirlpool Galaxies; and spiral, elliptical and irregular galaxies. All include suggestions for classroom use.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000862&mode=full>
 Scientist(s): Ms. Bonnie Eisenhamer Space Telescope Science Institute Baltimore, MD
 Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD
 Dr. Denise Smith Space Telescope Science Institute Baltimore, MD
 Dr. Frank Summers Space Telescope Science Institute Baltimore, MD
 Dr. Mark Voit Space Telescope Science Institute Baltimore, MD

A85. "Amazing Space" Homework Help

Theme(s): ASO
 Subject(s) Space Science
 Format(s) Web Site
 Grade(s) Grades K-12
 Msn/Prgm: HST[B22]
 Description: Homework Help directs visitors looking for classroom assignment help through "Amazing Space" online resources. Definitions, science fair ideas, and inspiration for classroom projects or debates are all available. Visitors can learn about Hubble Space Telescope discoveries with the "Star Witness," an astronomy bulletin geared toward kids, or use Homework Help's questions and answer and "Fast Facts" features.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000867&mode=full>
 Scientist(s): Ms. Bonnie Eisenhamer Space Telescope Science Institute Baltimore, MD
 Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD

A86. "Amazing Space" Pictures and Facts

Theme(s): ASO
 Subject(s) Space Science
 Format(s) Web Site
 Grade(s) Grades 5-12
 Msn/Prgm: HST[B22]
 Description: "Amazing Space" presents Pictures and Facts—lithographs with detailed background information and quick summaries of information accompanied by an image of an astronomical object. Lithographs contain astronomical images on one side and information about the object on the reverse. A "Fast Facts" feature lists the object's name, age, description, location, size, and distance from Earth. Topics include the planets, nebulae, the Hubble Space Telescope, and various galaxies. All include suggestions for classroom use.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000863&mode=full>
 Scientist(s): Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD

A87. "Amazing Space" Questions and Answers

Theme(s): ASO
 Subject(s) Physical Science, Space Science
 Format(s) Web Site
 Grade(s) Grades 6-12
 Msn/Prgm: HST[B22]
 Description: This product answers common student questions about comets, galaxies, gravity, the Hubble Space Telescope, light, color and the electromagnetic spectrum, and the Solar System. Each Question and Answer topic comes with suggestions for classroom use.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone:

410-338-4590.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000864&mode=full>

Scientist(s):	Ms. Bonnie Eisenhamer	Space Telescope Science Institute	Baltimore, MD
	Ms. Linda Knisely	Space Telescope Science Institute	Baltimore, MD
	Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
	Dr. Frank Summers	Space Telescope Science Institute	Baltimore, MD
	Dr. Mark Voit	Space Telescope Science Institute	Baltimore, MD

A88. "Amazing Space" Science Content Reading

Theme(s): ASO

Subject(s) Space Science

Format(s) Web Site

Grade(s) Grades 8-12

Msn/Prgm: HST[B22]

Description: The "Amazing Space" Science Content Readings help students learn about dust storms on Mars, nebulae, supernovas, the death of stars, and other facinating topics. The stories are illustrated with Hubble Space Telescope images and contain timelines, historical background, and scientific information. Suggestions for classroom use are included.

Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000865&mode=full>

Scientist(s):	Dr. Mark Voit	Space Telescope Science Institute	Baltimore, MD
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A89. "Astro-Venture"

Theme(s): ASO, SSE

Subject(s) Earth Science, Physical Science, Space Science, Technology, Life Science

Format(s) PDF, Web Site

Grade(s) Grades 5-8, General Public

Msn/Prgm: SIM[B31], TPF[B32], Cassini/Huygens Probe[B37], 2001 Mars Odyssey[B41], Lunar Prospector[B53], JIMO[B60]

Description: "Astro-Venture" is an educational, interactive, multimedia Web environment highlighting NASA careers and astrobiology research in the areas of astronomy, geology, biology and atmospheric sciences. Students in grades 5-8 role-play NASA occupations and use scientific inquiry as they search for and design a planet with the necessary characteristics for human habitation.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000830&mode=full>

Scientist(s):	Dr. Mary Urquhart	NASA Ames Research Center	Moffett Field, CA
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A90. Astrobiology: Discovering New Worlds of Life Interactive Poster

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: An interactive version of the award-winning poster, "Astrobiology: Discovering New Worlds of Life" (published in 2002) has been produced. The poster is mounted on a touch-sensitive screen and connected to a computer hard drive and a flat screen monitor. When touched, several of the features on the poster activate the monitor to display exciting video footage of life in hydrothermal vents, piloting the Alvin, and more. This interactive poster occupies little space, is portable, and may be set up by a single individual. The product will be made available to all members of the NASA Astrobiology Institute scientific and E/PO teams to be displayed at conferences, schools, universities and public lectures. It will then be made available to museums, science centers and libraries for public display on a rotational basis.

Contact: Dr. Julie Edmonds, Carnegie Institution of Washington, Washington, DC 20015. E-mail: Jedmonds@pst.ciw.edu.

A91. "Astrobiology: The Search for Life in the Universe"

Theme(s): ASO, SSE

Format(s) PDF, Web Site, Booklet

Grade(s) Grades 9-12

Msn/Prgm: NAI[B34]

Description: This color publication provides an overview of the field of Astrobiology written at the high school level. The

piece was originally published by "Research Penn State" magazine in their January 2001 issue and is based on a lecture series that was held at Penn State University in January 2000. The lecture series and the magazine supplement features NASA Astrobiology Institute (NAI) scientists from Penn State University, The University of Colorado, and Harvard University as well as researchers from the SETI Institute and Rice University. The Penn State Astrobiology Research Center and Pfizer, Inc. provided funding for the publication. The Pennsylvania Space Grant Consortium is distributing the publication to interested educators, students, researchers and others across the country and internationally. PDF and Web versions are also available.

Contact: Dr. Lisa Brown, Pennsylvania State University, University Park, PA 16802. E-mail: lisabrown@psu.edu.
 Primary URL: <http://www.psu.edu/spacegrant/astrobiology>
 Partner(s): NASA Office of Education Washington, DC
 Pennsylvania Space Grant Consortium University Park, PA

A92. "Auroras! Mysterious Lights in the Sky"

Theme(s): SEC
 Subject(s): Space Science
 Format(s): Book, Web Site
 Grade(s): Grades K-5
 Msn/Prgm: [B]
 Description: Resource designed to introduce the aurora to the elementary student. Included are science facts to be used by teachers and parents. The book comes alive through the Internet where with a flash download students can watch the movements of the animations as they read or have the book read to them.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000848&mode=full>

A93. "Capturing Whispers From Space"

Theme(s): SSE
 Subject(s): Mathematics, Physical Science, Technology
 Format(s): PDF, Poster/Wallsheet, Web Site
 Grade(s): Grades 5-9, Adult/Continuing Education, Community College, General Public
 Msn/Prgm: DSMS[B59]
 Description: This is a wallsheet describing the Deep Space Network and what it does for NASA. The wall sheet has information on careers in space and activities for children grades 5-9.
 Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.
 Contact: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000876&mode=full>

A94. Chandra Multi-Wavelength Postcards

Theme(s): SEU
 Subject(s): Space Science, Technology
 Format(s): Photograph
 Grade(s): Grades 4-12, Adult/Continuing Education, Community College, General Public, Higher Education
 Msn/Prgm: CXO[B65]
 Description: A series of postcards featuring an image taken by the Chandra X-Ray Observatory accompanied by comparative images of the same object in other wavelengths such as optical, radio or ultraviolet. The purpose is to provide concrete examples as the basis for discussion and study of the electromagnetic spectrum.
 Lead: Ms. Sandra Daly, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: sdaly@cfa.harvard.edu. Phone: 617-496-4784.
 Contact: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000825&mode=full>

A95. Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Science Investigation: Exploring the Interstellar Medium

Theme(s): SEU
 Subject(s): Mathematics, Physical Science, Space Science
 Format(s): PDF, Web Site
 Grade(s): Grades 9-12, Adult/Continuing Education, Community College, Higher Education
 Msn/Prgm: CHIPS[B72]
 Description: An educational brief describing the Interstellar Medium and the "local bubble" that is being studied by the NASA CHIPS satellite. The product contains review questions and problems for students based on the expository essay, plus two activities that help students understand some of the concepts discussed.
 Lead: Ms. Sandra Daly, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: sdaly@cfa.harvard.edu. Phone: 617-496-4784.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000837&mode=full>
 Scientist(s): Dr. Nahide Craig University of California, Berkeley Berkeley, CA

A96. "Discover the Solar Cycle"

Theme(s): SEC
 Subject(s): Earth Science, Mathematics, Physical Science, Space Science
 Format(s): Lithograph, PDF, Web Site
 Grade(s): Grades 6-8, General Public
 Msn/Prgm: RHESSI[B102]
 Description: Students plot the percentage of high-energy x-ray solar flares over several years to discover that the solar cycle of sunspot activity is also a cycle of solar flares.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000861&mode=full>
 Scientist(s): Dr. Isabel Hawkins University of California, Berkeley Berkeley, CA

A97. "El Universo a Sus Pies"

Theme(s): ASO, SEC, SEU, SSE
 Subject(s): Space Science
 Format(s): Book
 Grade(s): Grades 3-12
 Msn/Prgm: Office Of Space Science[B]
 Description: This 490-page notebook of astronomy activities in Spanish consists of the greatest hits of the "The Universe at Your Fingertips" and "More Universe at Your Fingertips." It includes 55 classroom-tested activities drawn from many sources (including NASA programs), translated with the help of a multinational panel of astronomers and educators.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Mr. Andrew Fraknoi, Astronomical Society of the Pacific, San Francisco, CA 94112. E-mail: fraknoi@fhda.edu. Phone: 415-337-1100.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000852&mode=full>

A98. "EventScope"

Theme(s): SSE
 Subject(s): Earth Science, Physical Science, Space Science, Technology
 Format(s): CD-ROM, Web Site
 Grade(s): Grades 6-9, Adult/Continuing Education, General Public
 Msn/Prgm: 2001 Mars Odyssey[B41], MER[B42]
 Description: "EventScope" is a 3-dimensional computer interface that allows students to virtually explore remote places like Mars. Students use problem-solving skills to enhance their understanding of scientific inquiry, the Solar System, Earth, planetary geology, and the use of computers in scientific exploration.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.
 Contact: Mr. Peter Coppin, Carnegie Mellon University, Pittsburgh, PA 15213. E-mail: coppin@cmu.edu. Phone: 412-268-1565.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000836&mode=full>

A99. High-Power Activity

Theme(s): SSE
 Subject(s): Earth Science, Physical Science, Space Science, Technology
 Format(s): Web Site
 Grade(s): Grades 8-12, Community College
 Msn/Prgm: Deep Impact[B51]
 Description: This activity is designed to engage students in grades 8–12 in activities that focus on collaboration and communication strategies. Students confront a simple issue of whether a simulated mission should place an additional digital camera onboard the Deep Impact spacecraft. Students research and debate the scientific and technological aspects of placing an additional camera onboard the spacecraft. These activities will strengthen student understanding of and ability to use collaborative processes and communication practices to clarify, conceptualize, and make decisions. The strategies rely primarily on student investigation into the background information that is necessary to support arguments; make quantitative risk analyses; engage in debate, role-playing, and persuasive writing/communication processes; and practice group decision-making procedures.
 Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.
 Contact: Ms. Maura Rountree-Brown, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Maura.Rountree-Brown@jpl.nasa.gov. Phone: 818-393-4897.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000875&mode=full>
 Scientist(s): Dr. Lucy McFadden University of Maryland College Park, MD

A100. “How Astronomers Use Spectra to Learn About the Sun and Other Stars”

Theme(s): SEC
 Subject(s): Astronomy
 Format(s): PDF
 Grade(s): Grades 6-12
 Msn/Prgm: SRT[B3]
 Description: The project is generating and distributing educational material for the lay public and grades 6-12 that explain how astronomers glean information about the Sun and other stars from their spectra. A PDF version of “How Astronomers Use Spectra to Learn About the Sun and Other Stars” has been produced and is available on the Solar Extreme Ultraviolet Research Telescope and Spectrograph (SERTS) Web site.
 Lead: Dr. Jeffrey Brosius, Catholic University of America, Washington, DC 20064. E-mail: brosius@comstoc.gsfc.nasa.gov. Phone: 301-286-6200.
 Primary URL: <http://serts.gsfc.nasa.gov>
 Scientist(s): Dr. Jeffrey Brosius NASA Goddard Space Flight Center Greenbelt, M

A101. HST Cycle E/PO Grant: “Accessible Universe: Making Astronomy Accessible in the Regular Elementary Classroom

Theme(s): ASO, SEC, SEU, SSE
 Msn/Prgm: HST[B22]
 Description: The study of exo-planetary systems receives both extensive media coverage and is a natural extension of studies of the Solar System at the elementary and middle school level. Such space-related topics are some of the most popular science curriculum areas at the elementary level and can serve as a springboard to the other sciences, mathematics, and technology for typical student learners. However, not all students are typical. Ten percent of American students are identified as having disabilities which have impacted their education to the extent that they receive special education services. Various estimates suggest that the bulk of these 10 percent may have mild learning impairments affecting their ability to access text materials. In some cases, these students benefit from more effective uses of visual materials. More frequently than not, these students are placed in comprehensive (mixed-ability) classrooms where individualized accommodations in the science curriculum are not feasible due to budget limitations, time pressures, or lack of teacher training. The “Accessible Universe” program addresses these issues by developing and piloting a suite of curriculum mate-

rials, modified activities, and instructional strategies which can more effectively teach astronomy to children with disabilities in the elementary regular education classroom, incorporating both adapted manipulatives and the use of assistive technology.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s):	Dr. Carol Grady	NASA Goddard Space Flight Center	Greenbelt, MD
Partner(s):	Howard County Public Schools		Ellicott City, MD
	NASA Goddard Space Flight Center		Greenbelt, MD

A102. HST Cycle E/PO Grant: Mapping the Solar Neighborhood

Theme(s): SEC

Msn/Prgm: HST[B22]

Description: The program worked with a science teacher who helped translate the scientific results obtained from HST on the Local Interstellar Medium (LSM) into material that can be understood by middle school children. The information will be developed into curriculum materials based on NASA research and national standards and should have long-term applications. The middle school educator, Ms. Haroldine Pratt from St. Francis de Sales School in Washington, D.C., was identified through the SUNBEAMS program. For five weeks, the educator will work as part of a team at Goddard Space Flight Center to prepare lesson plans based on HST results of the LSM. The educator will ensure that the lesson plans fit into the curriculum, are developmentally appropriate, and conform to National Science Education Standards. The scientists on the team will provide background material and information to enable the educator to become familiar with the science of LSM.

Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu. Phone: 410-338-4798.

Partner(s):	Catholic University of America	Washington, DC
	NASA Goddard Space Flight Center	Greenbelt, MD

A103. HST Formal Education

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: The Space Telescope Science Institute (STScI) develops curriculum support products and provides training for the K-12 formal education community. By demonstrating curriculum support tools that use HST discoveries, STScI astronomers and education specialists show educators how to integrate space science topics into the classroom.

Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu. Phone: 410-338-4798.

Scientist(s):	Ms. Lucy Albert	Space Telescope Science Institute	Baltimore, MD
	Ms. Heather Bradbury	Space Telescope Science Institute	Baltimore, MD
	Ms. Bonnie Eisenhamer	Space Telescope Science Institute	Baltimore, MD
	Mr. Jonathan Eisenhamer	Space Telescope Science Institute	Baltimore, MD
	Dr. Ian Griffin	Space Telescope Science Institute	Baltimore, MD
	Ms. Linda Knisely	Space Telescope Science Institute	Baltimore, MD
	Mr. Dan McCallister	Space Telescope Science Institute	Baltimore, MD
	Mr. John Stoke	Space Telescope Science Institute	Baltimore, MD
	Dr. Frank Summers	Space Telescope Science Institute	Baltimore, MD

A104. HST Lithograph

Theme(s): ASO

Subject(s): Earth Science, Physical Science, Space Science

Format(s): PDF

Grade(s): Grades 4-12, Adult/Continuing Education, Community College, General Public

Msn/Prgm: HST[B22]

Description: This picture of the HST floating in orbit above Earth includes a labeled diagram of the telescope's parts, vocabulary, statistics, a short description of how the telescope works, along with a brief explanation of why the telescope is named after the scientist Edwin P. Hubble. The lithograph is one of several offered by "Amazing Space."

Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000870&mode=full>

Scientist(s):	Dr. Rodger Doxsey	Space Telescope Science Institute	Baltimore, MD
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A105. HST: "Amazing Space"

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: "Amazing Space," a collaboration between scientists and teachers augmented by professional graphic artists, Web developers, programmers, and technical writers, is a line of educational products generated by the Space Telescope Science Institute. "Amazing Space" products incorporate real scientific data from NASA missions (primarily HST) and include several interactive online activities, as well as engaging printed material such as trading cards and a Hubble Deep Field activity packet. These curriculum support tools, which come complete with comprehensive teacher pages and suggested educational activities, can be used in the classroom and conform to national education standards.

Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu. Phone: 410-338-4798.

Primary URL: <http://amazing-space.stsci.edu>

Scientist(s):	Ms. Heather Bradbury	Space Telescope Science Institute	Baltimore, MD
	Ms. Bonnie Eisenhamer	Space Telescope Science Institute	Baltimore, MD
	Ms. Linda Knisely	Space Telescope Science Institute	Baltimore, MD
	Mr. Dan McCallister	Space Telescope Science Institute	Baltimore, MD
	Mr. Max Mutchler	Space Telescope Science Institute	Baltimore, MD

A106. "Ice in the Solar System" Interactive CDROM

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34], MESSENGER[B54]

Description: An interactive CD entitled "Ice in the Solar System" has been developed. The CD is designed for both students and teachers of grades pre-K to 5. The CD provides a series of lessons and experiences that build a conceptual understanding of ice here on Earth and beyond. The lessons progress through nine major conceptual strands: (1) ice as an immediate experience; (2) ice is water; (3) ice has structure; (4) ice is both rock and mineral; (5) ice in motion; (6) ice and energy transfer; (7) ice in layers; (8) ice and life; and (9) ice in space. Each strand contains lessons for students in grades K-2 and 3-5 that are aligned with the National Science Education Standards and the American Association for the Advancement of Science (AAAS) Benchmarks for Science Literacy. Each strand also has engaging student activities and interactive quizzes for independent learning and exploration. In addition, the CD contains a glossary linked to a gallery of over 50 video or still images which help to illustrate the topics covered in each of the 9 conceptual strands. The framework of the lessons was designed by Richard Shope, an E/PO coordinator at the Jet Propulsion Laboratory. The CD was designed and programmed by Crabtree and Company of Falls Church, VA. The CD will be distributed through "Science Scope," a magazine of the National Science Teachers Association (NSTA), at NSTA and other conferences at which the NAI E/PO division or other NASA-funded group is presenting, by direct mail upon request, and through NAI E/PO team members.

Contact: Dr. Julie Edmonds, Carnegie Institution of Washington, Washington, DC 20015. E-mail: Jedmonds@pst.ciw.edu.

A107. IDEAS Grant: "Astronomy-in-a-Box," Hands-on Space Science Resource Kit for Grades 5-8

Theme(s): ASO, SSE

Msn/Prgm: IDEAS[B1]

Description: Knowledge about the planets, the Solar System, stars, galaxies, and the Universe is changing at an amazing rate, one that often outpaces both teachers' and parents' abilities to stay abreast of developments that impact our most fundamental understanding of the world and how we teach our children about it. The good news is that classroom resources are available free or at low cost from many different sources: NASA's Teacher Resource Centers, the Astronomical Society of the Pacific, the Planetary Society, the Jet Propulsion Laboratory, the Lunar and Planetary Institute, Search for Extra-Terrestrial Intelligence Institute, various planetariums, etc. The bad news is that few teachers have the time, funds or expertise to compile them for use with their curriculum. If a selection of materials could be pre-packaged in a way that deliberately correlates them to specific grade-level curriculum and science education standards, teachers will be better prepared to present astronomical topics to their students in ways that are more effective and engaging for children. The "Astronomy-in-a-Box" program will develop a resource kit for Grades 5-8, and provide training for teachers to bring "hands-on" astronomy and space science to students and promote active learning in their classrooms.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s):	Mr. Stan Fukunaga Dr. Margaret Race	Chabot Space and Science Center SETI Institute	Oakland, CA Mountain View, CA
Partner(s):	Chabot Space and Science Center SETI Institute		Oakland, CA Mountain View, CA

A108. IDEAS Grant: Informal Study of the Solar System Through an Interactive Show for Elementary School Children

Theme(s): ASO, SEC, SSE
 Msn/Prgm: IDEAS[B1]
 Description: The goal of the project was to create an interactive show, "Martian Cat," that informally introduces elementary school children to the basics of the Solar System. The project involved a professional astronomer and primary school science and drama teachers who collaborated on the aesthetic quality, scientific truth and educational effectiveness of the show. The project included the development, testing, and dissemination of a new children's model of the Solar System that was used in the show but can also be used separately as an educational tool. The show was presented to the children of the Nantucket Elementary School and several other Massachusetts schools.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu.
 Phone: 410-338-4968.

Partner(s):	Maria Mitchell Observatory Nantucket Elementary School	Nantucket, MA Nantucket, MA
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A109. IDEAS Grant: Model-Building, An Instructional Activity for Interpreting Remotely Sensed Image Data

Theme(s): ASO, SEC, SEU, SSE
 Msn/Prgm: IDEAS[B1]
 Description: This project developed and disseminated a model-building methodology and a set of student-centered activities designed to develop skills for interpreting remotely sensed NASA data. Students constructed physical models, used inexpensive digital cameras to create digital images of the models, and analyzed computer-generated displays of these images to improve their understanding of real images of astronomical objects obtained by NASA satellites. Model-building activities were based upon digital images utilized by SEGway modules. In a summer workshop at the Exploratorium, teachers pilot tested our model-building activities, which was subsequently distributed on the SEGway Web site, the program's national network of science museums, and the Space Science Education Resource Directory. Further dissemination occurred through publication of our methodology, which can be incorporated into other projects that use NASA images for education and outreach.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu.
 Phone: 410-338-4968.

Primary URL: <http://home.pacbell.net/jeffr/modeling/htm>
 2nd URL: <http://csc.ssl.berkeley.edu/europa>

Scientist(s):	Dr. Jeffrey Friedman Dr. Isabel Hawkins	University of California, Berkeley University of California, Berkeley	Berkeley, CA Berkeley, CA
Partner(s):	Exploratorium University of California, Berkeley		San Francisco, CA Berkeley, CA

A110. IMAGE Classroom Activities Archive

Theme(s): SEC
 Msn/Prgm: IMAGE[B100]
 Description: This is an archive of over 70 classroom activities in space science developed by the IMAGE/POETRY program and by middle school and high school teachers. The activities cover all aspects of Sun-Earth Connection science through reading and math activities for grades 4-12. The activities are sorted by subject, type and education standard, and can also be accessed through a set of workbooks.

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov.
 Phone: 301-286-6953.

Primary URL: <http://image.gsfc.nasa.gov/poetry/activities.html>

Scientist(s):	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
Partner(s):	Cherry Hill Middle School		Elkton, MD

A111. IMAGE Internet Activities

Theme(s): SEC
 Msn/Prgm: IMAGE[B100]
 Description: The IMAGE/POETRY web site accumulates 170,000 hits per week and over 450,000 visitors to its many educational resources, including the award-winning "Ask the Space Scientist."
 Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.
 Primary URL: <http://image.gsfc.nasa.gov/poetry>
 Scientist(s): Dr. Sten Odenwald NASA Goddard Space Flight Center Greenbelt, MD

A112. "In a Different Light"

Theme(s): SEC
 Subject(s): Earth Science, Physical Science, Space Science
 Format(s): Book, Web Site
 Grade(s): Grades 6-12, Community College
 Msn/Prgm: GEC[B92], CINDI[B113]
 Description: "In a Different Light" is a cohesive unit for grades 6-12 that uses discovery to develop the understanding that visible light is composed of a spectrum of colors from red to violet, while extending the concept of a spectrum to include non-visible light. The unit includes tools and strategies for the development of student inquiry.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Mr. Don Robinson-Boonstra, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: dwrobin@pop400.gsfc.nasa.gov. Phone: 301-286-9728.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000835&mode=full>
 Scientist(s): Dr. Art Poland NASA Goddard Space Flight Center Greenbelt, MD

A113. "In Search of . . . Galaxies"

Theme(s): ASO
 Subject(s): Space Science
 Format(s): PDF
 Grade(s): Grades 7-12, Community College
 Msn/Prgm: HST[B22]
 Description: "In Search of . . . Galaxies" is a classroom activity developed to accompany the Warped Galaxy lithograph. Students are introduced to the topic of galaxies through this inquiry activity and then conduct research to answer the questions they develop about the image and the text. The activity is designed to prepare students to become more independent thinkers.
 Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000872&mode=full>
 Scientist(s): Ms. Linda Knisely Space Telescope Science Institute Baltimore, MD

A114. "Live From the Aurora" Educator's Guide

Theme(s): SEC
 Subject(s): Space Science, Technology
 Format(s): Web Site
 Grade(s): Grades 6-8
 Msn/Prgm: Sun-Earth Connection Missions[B]
 Description: "Live From the Aurora" is an interactive inquiry program designed to have students predict and follow a solar storm and the sighting of an aurora. Educators will learn how to guide their students through an online network, encourage their students to collaborate, analyze data, and make predictions. The educator's guide was created to enhance understanding while predicting a solar storm. The activities include direct applications along with background information. Student activities increase understanding of basic physical science through sunspots, radio waves, and magnetism. The activities are connected to science, math, and technology standards. Activities are aligned to grade levels based on the standards. Activities for lower levels related to magnetism will be added this summer.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

nate.james@gsfc.nasa.gov. Phone: 301-286-9789.

Contact: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: *lewis@mail630.gsfc.nasa.gov*. Phone: 301-286-3337.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000858&mode=full>

A115. "Mapping Magnetic Influence"

Theme(s): SEC

Subject(s) Physical Science

Format(s) Web Site

Grade(s) Grades 6–9

Msn/Prgm: Sun-Earth Connection Missions[B]

Description: This lesson allows students to explore magnets and the region of influence around a magnet called a magnetic field. Students will learn that magnets exert a force on a magnetically sensitive object without coming into direct contact. Students then create a map of the magnetic influence around the magnet.

Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

nate.james@gsfc.nasa.gov. Phone: 301-286-9789.

Contact: Mr. Troy Cline, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: *cline@mail630.gsfc.nasa.gov*. Phone: 301-286-6606.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000859&mode=full>

Scientist(s): Dr. Mario Acuna

NASA Goddard Space Flight Center

Greenbelt, MD

A116. Mars Image Analysis Activity

Theme(s): SSE

Subject(s) Earth Science, Physical Science, Space Science

Format(s) CD-ROM, PDF, Poster/Wallsheet, Web Site

Grade(s) Grades 5–12

Msn/Prgm: 2001 Mars Odyssey[B41]

Description: This activity is designed to put students in the role of scientists in analyzing the geological processes that occur on terrestrial planets such as Earth and Mars. Students will use THEMIS images to evaluate the geologic history and present conditions on Mars. This activity will enable students to better understand the geological history of Mars by using their knowledge of Earth's processes.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail:

Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000877&mode=full>

Scientist(s): Dr. Phil Christensen

Arizona State University

Tempe, AZ

A117. "Marsbound!" Mission to the Red Planet

Theme(s): SSE

Subject(s) Earth Science, Mathematics, Physical Science, Space Science, Technology

Format(s) Book, CD-ROM, PDF, Poster/Wallsheet, Web Site

Grade(s) Grades 4-12, Community College, General Public, Higher Education

Msn/Prgm: 2001 Mars Odyssey[B41], MER[B42]

Description: "Marsbound!" is an exciting self-contained lesson that highlights space science design, engineering, and technology processes. Students are challenged to plan a mission to Mars and then design a spacecraft that will carry out their mission. The activity uses a collectable card game format to make the lesson fun as well as educational. The activity is carefully aligned to national technology education standards.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail:

Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Contact: Mr. Keith Watt, Arizona State University, Tempe, AZ 85287. E-mail: *k.watt@asu.edu*. Phone: 480-965-0435.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000873&mode=full>

A118. MESSENGER Education Module, "Staying Cool"

Theme(s): SSE

Subject(s) Earth Science, Physical Science, Space Science

Format(s) PDF, Web Site

Grade(s) Grades K–12, Preschool Education

Msn/Prgm: MESSENGER[B54]

Description: MESSENGER education modules are standards-based pre-K to grade 12 educational materials which consist of lessons with embedded inquiry-based activities. The materials are designed to bring the excitement of the upcoming MESSENGER mission to Mercury to classrooms nationwide. The materials cover comparative planetary science; Solar System studies; and the process of designing, constructing, and sending a spacecraft to another planet. "Staying Cool" explores the challenges imposed on spacecraft design by the harsh environment near Mercury.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000874&mode=full>

A119. "More Astronomy at Your Fingertips": Astronomy Activities and Resources

Theme(s): ASO, SEC, SEU, SSE

Subject(s): Space Science

Format(s): Book

Grade(s): Grades 3–12

Msn/Prgm: Default Mission[B]

Description: This 356-page collection of activities and resources for teaching astronomy and space science in grades 3-12 is a supplement to "The Universe at Your Fingertips." The collection includes 27 classroom-tested activities drawn from many sources (including NASA programs), 8 resource guides, and 4 articles on teaching astronomy.

Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.

Contact: Mr. Andrew Fraknoi, Astronomical Society of the Pacific, San Francisco, CA 94112. E-mail: fraknoi@fhda.edu. Phone: 415-337-1100.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000853&mode=full>

A120. "Navigating by Good Gyration"

Theme(s): SSE

Subject(s): Physical Science, Space Science

Format(s): PDF

Grade(s): Grades 7–12

Msn/Prgm: Default Mission[B]

Description: This activity describes simple, yet impressive gyroscopic demonstrations that use only a bike wheel with a quick-release hub. The activity explains both the angular momentum principle that tends to keep the wheel in a rigid plane and the effects of the external forces that creates precession. Important concepts in physics are demonstrated without the use of mathematical equations. Understanding the forces at work on a gyroscope raises students' consciousness of many devices and phenomena, such as how and why a football, a rifle, and a Frisbee work and how an aircraft or a spacecraft can keep itself on course.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Contact: Ms. Diane Fisher, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: diane.k.fisher@jpl.nasa.gov. Phone: 818-354-9105.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000829&mode=full>

Scientist(s): Mr. John Stoke

Space Telescope Science Institute

Baltimore, MD

A121. PlanetQuest Student Activity Guide

Theme(s): ASO

Subject(s): Astronomy

Format(s): PDF, Web Site

Msn/Prgm: Navigator[B27], KECK[B28], LBT[B29], MSC[B30], SIM[B31], TPF[B32]

Description: Downloadable PDF pamphlet with instructions for four hands-on classroom activities related to Navigator Program science: "Looking for Planets Without Seeing Them;" "Measure a Tree;" "Measure the Earth;" and "Measure the Galaxy." Each activity includes both a student page and a teacher page.

Lead: Mr. Randal Jackson, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Randal.K.Jackson@jpl.nasa.gov. Phone: 818-393-5925.

Primary URL: <http://planetquest.jpl.nasa.gov>

A122. Soda Bottle Magnetometer

Theme(s): SEC

Msn/Prgm: IMAGE[B100]

Description: This simple device lets students measure changes in the local magnetic field in a classroom and search for signs of magnetic storms. The device was developed in 1997 by the IMAGE Education Program (POETRY) and is now a key element of the SECEF Student Observation Network (SON).

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.Primary URL: <http://image.gsfc.nasa.gov/poetry/workbook/page9.html>

Scientist(s): Dr. Sten Odenwald

NASA Goddard Space Flight Center

Greenbelt, MD

Partner(s): NASA Goddard Space Flight Center

Greenbelt, MD

A123. Solar Week

Theme(s): SEC

Subject(s) Space Science

Format(s) Web Site

Grade(s) Grades 5-9

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: Solar Week is a week of online curriculum with daily topics on the Sun, including "Sun as a Star", "the Sun Close Up", "Solar Activity", "Eclipses", and "Careers". Each day contains a game, an activity, topical questions, a related life science topic, teacher information, and an "Ask the Scientist" page.

Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.Contact: Mr. David Alexander, Lockheed Martin Solar and Astrophysics Lab, Palo Alto, CA 94304. E-mail: alexander@lmsal.com. Phone: 650-424-2047.Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000860&mode=full>**A124. Space Science Education Resource Directory**

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], DePaul B/F[B15], LPI B/F[B16], MARSSB[B17], NESSIE B/F[B18], SERCH B/F[B19], SSI B/F[B20], S2N2 B/F[B21]

Description: The Space Science Education Resource Directory (SSERD), an online repository of NASA space science education resources, is a collaborative effort between the members of the NASA space science Education Support Network. SSERD is the first project resulting from this collaboration between Education Forums and Broker/Facilitators. The Directory is operated and maintained by the Origins Forum at the Space Telescope Science Institute.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.Contact: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.Primary URL: <http://teachspacescience.org>

Scientist(s): Dr. Denise Smith

Space Telescope Science Institute

Baltimore, MD

A125. Sun-Earth Connections Educator Kit

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], MARSSB[B17], Ulysses[B89], Voyager[B90], RHESSI[B102], SOHO[B112], LWS[B114]

Description: Presentations of the Sun-Earth Connection materials were made throughout the summer at teacher workshops designed to provide intensive training in the use of problem/inquiry-based learning and technology. Elaine Lewis, E/PO outreach manager for this material, made the initial presentation of the Sun-Earth Educator packet. In subsequent sessions, InSTEP trainers applied what they learned from Elaine Lewis to conduct subsequent training activities. The Sun-Earth Connection Educator kits were distributed as resources that support the workshop goals and that enable teachers to get their students involved in scientific inquiry activities through access to NASA space science student data collection and mission events.

Lead: Ms. Kathy Norris, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: knorris@cet.edu. Phone: 304-243-

2498.

Contact: Ms. Jane Neuenschwander, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: jneuen@cet.edu. Phone: 304-243-4416.

Primary URL: <http://sunearth.gsfc.nasa.gov>

2nd URL: <http://lws.gsfc.nasa.gov>

A126. "Taking Apart the Light"

Theme(s): SSE

Subject(s): Physical Science, Space Science, Technology

Format(s): PDF, Web Site

Grade(s): Grades 7–12

Msn/Prgm: Solar System Exploration (SSE) Forum[B12]

Description: "Taking Apart the Light" introduces the electromagnetic spectrum and how scientists use spectroscopy to know what kinds of atoms and molecules are in a star or gas through which starlight passes. Includes classroom activities involving reading and a worksheet that can be done individually or in pairs.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Contact: Ms. Diane Fisher, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: diane.k.fisher@jpl.nasa.gov. Phone: 818-354-9105.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000821&mode=full>

Scientist(s): Dr. Arlene Levine NASA Langley Research Center Hampton, VA

A127. Teaching Kinesthetic Astronomy

Theme(s): ASO, SEC, SSE

Subject(s): Space Science

Format(s): Video/VHS

Grade(s): Grades 5–12

Msn/Prgm: SSI B/F[B20]

Description: This 20-minute video introduces kinesthetic astronomy and the "Sky Time" lesson to formal and informal educators. Through a series of simple body motions, students learn the relationship between time and the astronomical motions of Earth, and how these motions influence what we see in the sky at different times of the day and year.

Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.

Contact: Dr. Cherilynn Morrow, Space Science Institute, Boulder, CO 80301. E-mail: camorrow@colorado.edu. Phone: 720-974-5828.

Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000855&mode=full>

A128. The Electromagnetic Spectrum Poster

Theme(s): ASO, SEU

Subject(s): Space Science

Format(s): Poster/Wallsheet

Grade(s): Grades 6–12, Adult/Continuing Education, Community College, Higher Education

Msn/Prgm: HST[B22], JWST[B23], Kepler[B24], SST[B25], SOFIA[B26], KECK[B28], SIM[B31], TPF[B32], FUSE[B33], NAI[B34], Swift Gamma Ray Burst Mission[B78]

Description: This poster features a HST image of the Whirlpool Galaxy and three classroom activities designed to introduce students to different regions of the electromagnetic spectrum, including infrared, visible, and ultraviolet light. Images of the Whirlpool Galaxy in different regions of the electromagnetic spectrum illustrate the use of the electromagnetic spectrum in astronomy. Suggested science standards, vocabulary, and science background information are also provided.

Lead: Ms. Carole Rest, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: crest@stsci.edu. Phone: 410-338-4590.

Scientist(s):	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Dr. Luciana Bianchi	Johns Hopkins University	Baltimore, MD
	Ms. Stephanie Brown	Space Telescope Science Institute	Baltimore, MD
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA

Ms. Bonnie Eisenhamer	Space Telescope Science Institute	Baltimore, MD
Dr. Alan Gould	Lawrence Hall of Science	Berkeley, CA
Mr. W. Michael Greene	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Ian Griffin	Space Telescope Science Institute	Baltimore, MD
Ms. Linda Knisely	Space Telescope Science Institute	Baltimore, MD
Mr. Dan McCallister	Space Telescope Science Institute	Baltimore, MD
Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
Ms. Peg Stanley	Space Telescope Science Institute	Baltimore, MD
Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA
Dr. Mark Voit	Space Telescope Science Institute	Baltimore, MD
Dr. Kristina Wilmoth	NASA Ames Research Center	Moffett Field, CA

A129. "The Northern Lights"

Theme(s): SEC
 Subject(s): Mathematics, Space Science, Technology
 Format(s): PDF, Web Site
 Grade(s): Grades 7-8
 Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]
 Description: A grade 7-8 workbook with 10 activities to explore the Northern Lights based on reading, math, geometry, and science. A number of hands on activities and the use of technology help to deepen the students understanding of these beautiful and mysterious phenomena.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.
 Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000857&mode=full>

A130. The Student Space Program: Collaborative Learning through Virtual Mission Design

Theme(s): SSE
 Msn/Prgm: SRT[B3]
 Description: Presently several major missions to explore the solar system have been launched and others are planned for the future. We will build on the public's fascination with space, the desire of high school teachers to spark student interest in science and the capabilities of the Internet to create an educational project featuring interactions between research scientists, teachers, and teams of students. These interactions will be facilitated by the creation of a Web-based structure that includes a series of modules containing text, images, videos, interactive simulations, and animations. The goal is to produce a set of collaborative project packages that promote group learning by involving teams of students at different schools working with satellite data and simulation results to design virtual space science missions to explore the solar system. Emphasis will be placed on learning and undertaking basic science principles.
 Lead: Dr. Maha Ashour-Abdalla, University of California, Los Angeles, Los Angeles, CA 90095. E-mail: mabdalla@igpp.ucla.edu. Phone: 310-825-8881.
 Scientist(s): Dr. Maha Ashour-Abdalla, University of California, Los Angeles, Los Angeles, CA
 Dr. Robert Richard, University of California, Los Angeles, Los Angeles, CA

A131. "The Universe at Your Fingertips": Astronomy Activity and Resource Notebook

Theme(s): ASO, SEC, SEU, SSE
 Subject(s): Space Science
 Format(s): Book
 Grade(s): Grades 3-12
 Msn/Prgm: Office Of Space Science[B]
 Description: This 813-page collection of activities and resources for teaching astronomy and space science in grades 3-12 includes 87 classroom-tested activities drawn from many sources (including NASA programs). Selected by a panel of veteran educators, it includes 29 resource guides and 21 articles on astronomy along with further teaching background information.
 Lead: Mr. Nathan James, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: nate.james@gsfc.nasa.gov. Phone: 301-286-9789.
 Contact: Mr. Andrew Fraknoi, Astronomical Society of the Pacific, San Francisco, CA 94112. E-mail: fraknoi@fhda.edu.

Subject(s) Earth Science, Physical Science, Space Science
Format(s) Poster/Wallsheet
Grade(s) Grades 7–12
Msn/Prgm: HEASARC[B81], INTEGRAL[B85]
Description: A poster which illustrates our connection to the chemical elements and their cosmic origin. The poster shows selected elements created in the Big Bang, small and large stars, supernovae, and cosmic rays, as well as the connection to these elements that are all around us.
Lead: Ms. Sandra Daly, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: sdaly@cfa.harvard.edu. Phone: 617-496-4784.
Primary URL: <http://teachspacescience.org/cgi-bin/search.plex?catid=10,000831&mode=full>
Scientist(s):

Dr. Michael Arida	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Eric Christian	NASA Office of Space Science	Washington, DC
Dr. Georgia DeNolfo	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Ilana Harrus	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Meredith Ihnat	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Beth Jacob	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Koji Mukai	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Suzanne Pleau-Kinnison	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Gail Rohrbach	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Karen Smale	NASA Goddard Space Flight Center	Greenbelt, MD

EDUCATIONAL ACTIVITIES

Classroom Education

Systemic Improvement

A136. Chicago Teachers' Advisory

Theme(s): ASO, SEC, SEU, SSE
Msn/Prgm: DePaul B/F[B15]
Description: The Chicago Teachers' Advisory is a partnership between the DePaul Broker/Facilitators and Chicago teachers whose goal is to develop ways to bring space science to the schoolchildren of Chicago. Advisory meetings called Space Science Symposia occur once or twice a year and attract a broad group of teachers representative of the Chicago Public School System. Sessions are a mixture of space science presentations by local scientists and discussions in areas such as curriculum and professional development, NASA resources, and communication. Other special events occur as needs and opportunities arise. Planning for symposia and other events is done in monthly meetings by a small group of teachers known as Teacher Consultants.
Lead: Dr. Lynn Narasimhan, DePaul University, Chicago, IL 60604. E-mail: cnarasim@depaul.edu. Phone: 773-325-1854.
Scientist(s):

Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Orlando Figueroa	NASA Office of Space Science	Washington, DC
Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Dr. Sanjay Limaye	University of Wisconsin-Madison	Madison, WI
Dr. Carolyn Narasimhan	DePaul University	Chicago, IL
Dr. Mark Robinson	Northwestern University	Evanston, IL
Dr. Cassandra Runyon	College of Charleston	Charleston, SC
Dr. James Sweitzer	DePaul University	Chicago, IL

Event(s):				Participants		
Dates		Location				
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Oct 02	09 Oct 02	DePaul University	Chicago, IL	11	0	0
30 Oct 02	30 Oct 02	DePaul University	Chicago, IL	8	0	0
22 Jan 03	22 Jan 03	DePaul University	Chicago, IL	11	0	0

05 Feb 03	05 Feb 03	DePaul University	Chicago, IL	5	0	0
08 Feb 03	08 Feb 03	DePaul University	Chicago, IL	134	0	0
01 Mar 03	01 Mar 03	DePaul University	Chicago, IL	23	0	0
26 Mar 03	26 Mar 03	DePaul University	Chicago, IL	12	0	0
10 Apr 03	10 Apr 03	DePaul University	Chicago, IL	11	0	0
05 May 03	05 May 03	DePaul University	Chicago, IL	13	0	0
02 Sep 03	02 Sep 03	DePaul University	Chicago, IL	12	0	0
27 Sep 03	27 Sep 03	DePaul University	Chicago, IL	136	0	0

A137. Space Science Education in New England Colleges

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: The college setting is often the only place where students are exposed to astronomy and space science in any substantive way. Indeed, astronomy courses tend to be very popular, with as many as 25 percent of all college students having taken at least one such course during a typical 4-year undergraduate career. As part of its Broker/Facilitator mission, New England Space Science Initiative in Education Broker/Facilitator (NESSIE) is helping to enhance the quantity and quality of space science education in New England colleges. The involvement of OSS-supported space scientists is critical to this effort. This year, NESSIE agents participated in a research seminar at Tufts University on cognitive issues in astronomy education. They also brokered and facilitated a speaker series at Tufts on space science and technology. This series was especially popular with the engineering students who represent NASA's future workforce. NESSIE agents continued to advocate for space science education courses that are tailored to the needs of students in education and museum studies programs. These efforts have culminated in a pilot course on space science education that began in September. Next year, NESSIE will co-host a major symposium on teaching undergraduate astronomy, "Cosmos in the Classroom 2004," that will be held at Tufts University on July 16-18, 2004.

Lead: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/nessie>

2nd URL: <http://www.tufts.edu/as/astronomy>

Scientist(s):	Ms. Lori Agan	Wheaton College	Norton, MA
	Dr. Eric Chaisson	Tufts University	Medford, MA
	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Dr. Laurence David	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Samuel Kounaves	Tufts University	Medford, MA
	Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Leonard Strachan	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Wesley Traub	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. William Waller	Tufts University	Medford, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Nov 02	15 Nov 02	Tufts University	Medford, MA	20	0	0
06 Dec 02	06 Dec 02	Yale University	New Haven, CT	25	0	0
13 Dec 02	13 Dec 02	Tufts University	Medford, MA	20	0	0
05 Jan 03	05 May 03	Tufts University	Medford, MA	10	0	0
14 Feb 03	14 Feb 03	Tufts University	Medford, MA	20	0	0
28 Feb 03	28 Feb 03	Tufts University	Medford, MA	20	0	0
28 Mar 03	28 Mar 03	Tufts University	Medford, MA	20	0	0
31 Mar 03	31 Mar 03	University of Massachusetts	Amherst, MA	30	0	0
18 Apr 03	18 Apr 03	Tufts University	Medford, MA	20	0	0

A138. Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Boston, MA

Theme(s): SEU

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], NESSIE B/F[B18]

Description: The SEU Forum participated in and supported a set of professional development workshops for Boston middle and elementary school teacher leaders who were piloting an astronomy-based National Science Foundation-funded curriculum in their classrooms and looking for opportunities to enhance and leverage teaching and learning with NASA space science resources.

Lead: Dr. Jennifer Grier, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: jagrier@cfa.harvard.edu.

Scientist(s): Dr. Jennifer Grier Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Partner(s): Boston Public Schools Boston, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Oct 02	18 Oct 02	Boston Public Schools	Boston, MA	50	0	0
07 Dec 02	07 Dec 02	Boston Public Schools	Boston, MA	50	0	0

A139. Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Cambridge, MA

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], NESSIE B/F[B18]

Description: The SEU Forum is working with the professional development coordinators for the Cambridge Public Schools to develop strategies for enhancing the teaching and learning of Earth, space, and physical science topics using NASA space science resources. This work includes curriculum planning, as well as science study groups for teacher professional development.

Lead: Dr. Jennifer Grier, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: jagrier@cfa.harvard.edu.

Scientist(s): Ms. Mary Dussault Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Dr. Roy Gould Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Dr. Jennifer Grier Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Partner(s): Cambridge Public School System Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 May 03	23 May 03	John M. Tobin School	Cambridge, MA	8	0	0
24 Jun 03	25 Jun 03	Morse School	Cambridge, MA	15	0	0

A140. Sun-Earth Connection Education Forum (SECEF) Formal Education Systemic Improvement

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: SECEF collaborates with local, state, regional, and national science, mathematics, technology, and engineering institutions to support systemic improvement and influence policy in K-12 education.

Lead: Mr. Lou Mayo, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: louis.a.mayo.1@gsfc.nasa.gov. Phone: 301-286-0165.

Scientist(s): Mr. Louis Mayo NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Feb 03	05 Jun 03	NASA Goddard Space Flight Center	Greenbelt, MD	38	0	0

A141. Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], Sun-Earth Connection (SEC) Forum[B14], NESSIE B/F[B18], SSI B/F[B20], SOFIA[B26]

Description: The Space Science Institute (SSI) of Boulder, CO, and its Broker program conduct 4-day workshops, 3-day special topic workshops, conference sessions/tutorials, and local seminars for space scientists, engineers and managers of K-14 education and public outreach (E/PO) programs. Approximately 650 participants and guest presenters have been served. The goals of the four-day workshops are (1) to enhance and sustain a national cadre of well-informed NASA scientists, engineers, and E/PO managers who can act as advocates and leaders for effective science education and as role models for colleagues engaged in E/PO activities; (2) to strengthen and increase the effectiveness of the education activities involving the NASA science and engineering communities that are presently (and soon-to-be) underway; and (3) to provide scientists, engineers, and E/PO managers who are active in E/PO with focused and ongoing opportunities for showcasing their work and networking with colleagues and education experts. The 3-day workshops are intended to focus on particular E/PO topics in more detail (e.g. Professional Development of Teachers, Informal Education, Educational Technology, etc). This year, SSI hosted an

extremely popular 3-day workshop entitled "Designing Exemplary Professional Development Experiences for Educators." SSI also worked in collaboration with John Rundell, a Boulder, CO middle school teacher to create a video entitled, "A Day in the Life of a Middle School Teacher." The video's aim is to provide perspective on classroom teaching to scientists and other professionals interested in education. The SSI Broker continues to seek additional opportunities to provide seminars and workshops in areas where there are relatively large clusters of space scientists who have E/PO options associated with their research grants.

Lead: Dr. Cherilynn Morrow, Space Science Institute, Boulder, CO 80301. E-mail: camorrow@colorado.edu. Phone: 720-974-5828.

Primary URL: <http://www.spacescience.org>

Scientist(s):	Dr. David Alexander	Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA
	Mr. Michael Allen	Washington State University	Pullman, WA
	Ms. Jennifer Anderson	Brown University	Providence, RI
	Mr. Jessie Antonellis	University of Arizona	Tucson, AZ
	Dr. Ghassam Asrar	NASA Office of Earth Science	Washington, DC
	Dr. Susan Avery	University of Colorado, Boulder	Boulder, CO
	Dr. Dan Baker	University of Colorado, Boulder	Boulder, CO
	Ms. Lindsay Bartolone	Adler Planetarium and Astronomy Museum	Chicago, IL
	Ms. Jadwiga (Yaga) Beres	National Center for Atmospheric Research	Boulder, CO
	Dr. Arthur Bowman	Hampton University	Hampton, VA
	Dr. Susan Buhr	University of Colorado, Boulder	Boulder, CO
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Dr. Edward DeLuca	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Paul Dusenbery	Space Science Institute	Boulder, CO
	Ms. Karen Edgerly	University of Colorado, Boulder	Boulder, CO
	Dr. Richard Fisher	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Susan Foster	National Center for Atmospheric Research	Boulder, CO
	Dr. Jennifer Grier	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Frank Hall	American Geophysical Union	Washington, DC
	Dr. Heidi Hammel	Space Science Institute	Boulder, CO
	Mr. James Harold	Space Science Institute	Boulder, CO
	Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
	Mr. Ernest Hilsenrath	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Roberta Johnson	University Corporation for Atmospheric Research	Boulder, CO
	Mr. John Keller	University of Arizona	Tucson, AZ
	Dr. Tim Killeen	National Center for Atmospheric Research	Boulder, CO
	Ms. Kelliann LaConte	California Institute of Technology	Pasadena, CA
	Ms. Sandra Laursen	University of Colorado, Boulder	Boulder, CO
	Dr. Ramon Lopez	University of Texas at El Paso	El Paso, TX
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Dr. Ellis Miner	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Dr. Jeremy Mould	National Optical Astronomy Observatory	Tucson, AZ
	Mr. George Nelson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
	Dr. Stephen Pompea	Pompea and Associates	Tucson, AZ
	Dr. Gary Rottman	University of Colorado, Boulder	Boulder, CO
	Dr. Philip Scherrer	Stanford University	Stanford, CA
	Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
	Dr. Andrea Schweitzer	Little Thompson Observatory	Berthoud, CO
	Dr. Stephanie Shipp	Rice University	Houston, TX
	Dr. Timothy Slater	University of Arizona	Tucson, AZ
	Ms. Lesley Smith	University of Colorado, Boulder	Boulder, CO
	Ms. Michelle Smith	Cameron University	Lawton, OK
	Dr. Cary Sneider	Museum of Science	Boston, MA
	Dr. Richard Somerville	University of California, San Diego	La Jolla, CA
	Ms. Marijke Unger	University of Colorado, Boulder	Boulder, CO

Partner(s):	Dr. Richard Vondrak	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. William Waller	Tufts University	Medford, MA
	Dr. Ming-Ying Wei	NASA Office of Earth Science	Washington, DC
	Dr. Thomas Windham	University Corporation for Atmospheric Research	Boulder, CO
	American Astronomical Society		Washington, DC
	American Geophysical Union		Washington, DC
	Biological Sciences Curriculum Study		Colorado Springs, CO
	NASA Goddard Space Flight Center		Greenbelt, MD
	NASA Jet Propulsion Laboratory		Pasadena, CA
	NASA Office of Earth Science		Washington, DC
	NASA Office of Space Science		Washington, DC
	National Academy of Sciences		Washington, DC
Event(s):	National Optical Astronomy Observatory		Tucson, AZ
	National Science Foundation		Arlington, VA
	University of California, Berkeley		Berkeley, CA
	University of Colorado, Boulder		Boulder, CO
	University of Texas at El Paso		El Paso, TX

Event(s):						
Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Oct 02	11 Oct 02	American Astronomical Society, Division of Planetary Science				
			Birmingham, AL	100	0	0
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	100	0	0
06 Dec 02	10 Dec 02	American Geophysical Union Fall Meeting	San Francisco, CA	100	0	0
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	25	0	0
24 Jan 03	26 Jan 03	Space Science Institute	Boulder, CO	33	0	0
04 May 03	07 May 03	Space Science Institute	Boulder, CO	36	0	0
05 May 03	05 May 03	Space Science Institute	Boulder, CO	25	0	0
16 Jun 03	20 Jun 03	American Astronomical Society Solar Physics Division				
			Laurel, MD	100	0	0
25 Jun 03	25 Jun 03	Universities Space Research Association	Moffett Field, CA	15	0	0
01 Jul 03	01 Jul 03	University of Colorado, Boulder	Boulder, CO	29	0	0

Teacher Preparation/Enhancement

A142. A Space Science and Astronomy Workshop for Teachers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: This project is an astronomy and space science workshop, which was conducted on the campus of Western Kentucky University (WKU) for 20 middle and high school Kentucky teachers. The workshop consisted of five, day-long sessions to be held at WKU's Hardin Planetarium and an evening observing session. The Kentucky Education Reform Act (KERA) and successive legislation have mandated major changes in the ways that science will be taught and learning will be assessed in Kentucky's schools. Activities designed to aid teachers in achieving current academic teaching and assessment goals were integrated throughout the workshop. The activities contained a balance of content and methods. Teachers participated in hands-on learning activities, planetarium activities such as constellation learning sessions, and illustrations of long-term observing and experimental projects for their students. Educational materials from NASA Centers were utilized, and a NASA educator held a Lunar Sample certification session for the participants. Outcomes for the participants included: improvement of their knowledge of core concepts and teaching skills in astronomy and space science; increased expertise in achieving current Kentucky academic expectations; experience in performance-based assessment for gauging the experimental skills of their students; and development of a portfolio of long-term projects for students, including integrated curriculum activities. Each participant was given several hundred dollars worth of teaching materials for immediate use in the classroom based on the workshop content.

Lead: Dr. Roger Scott, Western Kentucky University, Bowling Green, KY 42101. E-mail: roger.scott@wku.edu. Phone: 270-745-4044.

Partner(s): Kentucky Space Grant Consortium
NASA Office of Education

Bowling Green, KY
Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Jul 03	25 Jul 03	Western Kentucky University	Bowling Green, KY	19	0	0

A143. "A Teacher's Guide to the Universe": MAP Workshop

Theme(s): SEU

Msn/Prgm: WMAP[B79]

Description: This workshop, which has been given at national and local conventions, introduces middle school, high school, and college teachers to cosmology and how to teach students about the origins and evolution of the Universe in a hands-on way in their classrooms. This workshop directs them to resources found on the Internet, such as the "A Teacher's Guide to the Universe" Web site, the "Cosmic Journeys" web site, and the SEU Forum Web site. SEU Forum educator kits were distributed as a part of these workshops.

Contact: Ms. Lindsay Bartolone, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: clark@astro.princeton.edu. Phone: 312-322-0316.

Primary URL: <http://www.astro.princeton.edu/~clark/teachersguide.html>2nd URL: <http://map.gsfc.nasa.gov>

Scientist(s): Ms. Lindsay Bartolone Adler Planetarium and Astronomy Museum Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	50	0

A144. "Active Astronomy": Classroom Activities for Learning About Infrared Light

Theme(s): ASO

Msn/Prgm: SST[B25], SOFIA[B26]

Description: "Active Astronomy" is a set of four classroom activities that allows students to explore invisible light. It was developed by the SOFIA E/PO program in collaboration with the physics department at Montana State University in Bozeman. The activities are designed to supplement classroom instruction on the electromagnetic spectrum, for which experiments ordinarily show only the behavior of visible light. All activities are standards-based (national science education standards). The activities were evaluated by the Origins Forum evaluation team at the Space Telescope Science Institute and subsequently tested in more than 20 middle and high school classrooms in the United States. "Active Astronomy" is disseminated via the SOFIA Web site and the Space Sciences Educational Resources Directory. SOFIA E/PO staff offer "Active Astronomy" short courses to teachers at national and regional science teacher conferences in collaboration with Spitzer Space Telescope E/PO personnel.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Primary URL: http://sofia.arc.nasa.gov/Edu/materials/edu_materials.html

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA
	Dr. Ken Gardner	Yerkes Observatory	Williams Bay, WI
	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Dr. Robert Hurt	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Partner(s):	Astronomical Society of the Pacific	San Francisco, CA
	Montana State University	Bozeman, MT
	SETI Institute	Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	60	0	0

14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	46	0	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	40	0	0
28 Feb 03	01 Mar 03	Spring Meeting of the Council of Science and Math Educators of San Mateo County	Redwood City, CA	15	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	50	0	0
02 Apr 03	30 Sep 03	Jay Stream Middle School	Carol Stream, IL	31	0	0
20 May 03	25 Sep 03	Geneva Lakes Environmental Education Association	Lake Geneva, WI	10	0	0
18 Sep 03	20 Sep 03	Astrofest	Manteno, IL	0	150	0

A145. "Beyond the Visible Universe: Teaching Invisible Astronomy"

Theme(s): ASO

Msn/Prgm: SST[B25], SOFIA[B26]

Description: "Beyond the Visible Universe: Teaching Invisible Astronomy" is a 1-hour workshop to raise educators' awareness of NASA's infrared astronomy research programs and their expected contributions to our understanding of the origin and evolution of the Universe. The presentation includes information about future infrared astronomy applications of SOFIA and the Spitzer Space Telescope, demonstrations with an infrared camera and infrared video (produced by Spitzer), and provision of resource materials for teachers and college instructors who participate. Participants are informed about how they can integrate similar activities into their curricula. Future opportunities to collaborate with astronomers on SOFIA research flights are described, and participants are invited to register for the SOFIA E/PO electronic newsletter.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Primary URL: http://sofia.arc.nasa.gov/Edu/calendar/edu_calendar.html

Scientist(s):	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Nov 02	09 Nov 02	Illinois State Teachers Association Annual Conference	Saint Charles, IL	45	0	0
09 Mar 03	11 Mar 03	Wisconsin Society of Science Teachers Convention	Wisconsin Dells, WI	14	6	0
15 Apr 03	16 Apr 03	National Organization of Black Chemists and Chemical Engineers Annual Conference	Indianapolis, IN	18	0	0
02 May 03	03 May 03	North Central Region of the Astronomical League	Sturgeon Bay, WI	9	41	0

A146. "Black Holes in a Different Light": Educator Workshop

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: A 1-hour presentation on how we see black holes, with demonstrations of the "Groovy X-Ray Binary Model" and "Spinning Black Holes"—frame dragging activities.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Primary URL: <http://heasarc.gsfc.nasa.gov>

2nd URL: <http://imagine.gsfc.nasa.gov>

Scientist(s):	Ms. Amanda Cook	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Sara Mitchell	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Eric Winter	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Nov 02	05 Nov 02	Science Teachers Association of New York	Ellenville, NY	80	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	100	0	0
28 Feb 03	28 Feb 03	Waynesboro High School	Waynesboro, PA	26	0	0
13 Mar 03	13 Mar 03	National Teacher Training Institute	Harrisonburg, VA	3	0	0
05 Aug 03	05 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	20	0	0

A147. "Bright Lights, Big City": Massive Galaxies and Supermassive Black Holes

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: In response to the education needs of the rural communities in the Central Valley and Tri-Valley areas of California, students, teachers, and the general public attend "Science on Saturdays" presentations developed by scientist-teacher collaborations under a Chandra Cycle 4 E/PO Grant. The program is a 5-week series of free interactive, multimedia presentations that are suitable for students, teachers, and the general public. Topics are selected from the forefront of science and technology research in a variety of disciplines. In the program "Bright Lights, Big City," the evolution of black holes and massive galaxies in the early Universe is explored. The presentation was disseminated to three locations in northern and central California. A CD, suitable for classroom use and aligned with California state science standards, was produced and distributed to teachers.

Lead: Dr. Wil van Breugel, Lawrence Livermore National Laboratory, Livermore, CA 94551-9900.

Contact: Dr. Stan Hitomi, University of California, Davis, Davis, CA 95616.

Scientist(s): Dr. Wil van Breugel Lawrence Livermore National Laboratory Livermore, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Mar 03	15 Mar 03	Merced College	Merced, CA	0	250	0
12 Apr 03	12 Apr 03	Amador Theater	Pleasanton, CA	0	350	0
19 Apr 03	19 Apr 03	Chabot College	Hayward, CA	0	50	0

A148. Chandra X-Ray Center Teacher Workshops and Presentations

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: The Chandra X-Ray Center holds professional development and inservice workshops for teachers on space science topics in collaboration with the Wright Center for Science Education at Tufts University in Medford, MA; provides scientist and educator presenters to education workshops and conferences sponsored by other organizations; cosponsors the Rutgers Astrophysics Summer Institute for high school students and teachers; and carries out a program to prepare Chandra Teacher Resource Agents through workshops and the Wright Center's Teacher-Scholar program. This year, two workshops were held in collaboration with the Wright Center for 55 educators selected from a nationwide application pool, 20 students and 14 teachers participated in the Rutgers Summer Institute, and 15 Chandra Resource Agents attended a special workshop. In addition, the Chandra Education Specialist, Ms. Donna Young, and Chandra Resource Agents presented talks and workshops at national and state education conferences.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.Primary URL: <http://chandra.harvard.edu>2nd URL: http://www.tufts.edu/as/wright_center

Scientist(s):	Ms. Elizabeth Adler	Tufts University	Medford, MA
	Dr. Eric Chaisson	Tufts University	Medford, MA
	Mr. Nicholas Deamer	Tufts University	Medford, MA
	Dr. Martin Elvis	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Eugenia Etkin	Rutgers University	Piscataway, NJ
	Mr. Gary Glick	Tufts University	Medford, MA
	Ms. April Hobart	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Kimberly Kowal	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

	Ms. Karen Lancour	Tufts University	Medford, MA
	Dr. Michael Lawrence	Rutgers University	Piscataway, NJ
	Mr. George Leonberger	Tufts University	Medford, MA
	Ms. Kathleen Lestition	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Jan Malle	Point Park College	Pittsburgh, PA
	Dr. Terry Matilsky	Rutgers University	Piscataway, NJ
	Dr. Janet Mattei	American Association of Variable Star Observers	Cambridge, MA
	Ms. Pam Perry	Tufts University	Medford, MA
	Mr. Jordan Raddick	Johns Hopkins University	Baltimore, MD Dr.
	Christine Anne Royc	Shippensburg University	Shippensburg, PA
	Dr. Eric Schlegel	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Linder Winter	Tufts University	Medford, MA
	Ms. Donna Young	Tufts University	Medford, MA
Partner(s):	Rutgers University		Piscataway, NJ
	Tufts University		Medford, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	Arizona Science Teachers Association	Mesa, AZ	30	0	0
01 Oct 02	18 Jul 03	Rutgers University	Piscataway, NJ	34	0	0
11 Oct 02	11 Oct 02	Maine Science Teachers Association	Lewiston, ME	100	300	0
15 Oct 02	16 Oct 02	New Jersey Science Convention	Somerset, NJ	0	100	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	50	0	0
29 Oct 02	29 Oct 02	Rhodes College	Memphis, TN	100	0	0
01 Nov 02	02 Nov 02	American Association of Physics Teachers - North Carolina Section Meeting	Asheville, NC	20	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	30	0	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	42	0	0
10 Jan 03	16 Jan 03	American Association of Physics Teachers	Austin, TX	0	100	0
01 Feb 03	01 Feb 03	Rio Grande Valley Science Association	Edinburg, TX	48	0	0
17 Feb 03	17 Feb 03	Tucson Area Physics Teachers Conference	Tucson, AZ	25	0	0
24 Feb 03	24 Feb 03	Auburn University	Auburn, AL	15	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	31	0	0
05 Apr 03	05 Apr 03	Arizona Association of Physics Teachers	Tucson, AZ	45	0	0
25 Jun 03	29 Jun 03	Tufts University	Medford, MA	30	0	0
07 Jul 03	11 Jul 03	Swan Valley Eco-Center	Kalispell, MT	20	0	0
19 Jul 03	23 Jul 03	Tufts University	Medford, MA	60	0	0
23 Jul 03	26 Jul 03	Tufts University	Medford, MA	15	0	0
28 Jul 03	30 Jul 03	Maine Mathematics and Science Alliance	Augusta, ME	15	0	0
02 Aug 03	06 Aug 03	American Association of Physics Teachers	Madison, WI	40	0	0
03 Aug 03	05 Aug 03	Davis and Elkins College	Elkins, WV	17	0	0
11 Aug 03	15 Aug 03	Thinkers, Learners and Computers	Orono, ME	30	0	0
09 Sep 03	09 Sep 03	Shippensburg University	Shippensburg, PA	18	0	0

A149. Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) Teacher Support

Theme(s): SSE

Msn/Prgm: MRO[B45]

Description: If water once flowed on Mars, did it leave any clues? In 2005, aboard the Mars Reconnaissance Orbiter (MRO), the CRISM instrument will join NASA's set of high-tech detectives seeking traces of past water on Mars. This was a presentation on the story of a space mission, using the MRO CRISM instrument as an example.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Primary URL: <http://crism.jhuapl.edu>

2nd URL: <http://www.spaceacademy.jhuapl.edu>

Scientist(s): Dr. Benjamin Bussey Johns Hopkins Applied Physics Laboratory Laurel, MD

Partner(s): Maryland Science Center Baltimore, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 May 03	01 May 03	Maryland Public Television	Owings Mills, MD	35	0	0

A150. "Cosmic Journeys" Collectible Card Game: Educator Workshop

Theme(s): SEU

Msn/Prgm: CXO[B65], Constellation-X[B67], GLAST[B68], LISA[B70], WMAP[B79], HEASARC[B81]

Description: Presentation of the card game "Cosmic Journeys". Players collect components of missions and try to overcome obstacles to launching their satellites. Game provides information on HEASARC and SEU missions such as Chandra, WMAP, GLAST, LISA, and Constellation X.

Lead: Ms. Amanda Cook, NASA Goddard Space Flight Center, Greenbelt, MD 20771.

Primary URL: <http://imagine.gsfc.nasa.gov/docs/teachers/elements>

Scientist(s): Dr. James Lochner NASA Goddard Space Flight Center Greenbelt, MD

Ms. Sara Mitchell NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Aug 03	05 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	20	0	0

A151. "Cosmic Questions": Professional Development

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], DePaul B/F[B15], NESSIE B/F[B18]

Description: In conjunction with its "Cosmic Questions" traveling exhibition, the SEU Forum has partnered with the Museum of Science, Boston, to create materials and programs that help teachers of grades 7-12 (and museum docents) to enhance their own content knowledge and prepare them to effectively use the exhibition to meet science and mathematics education standards. All museums or science centers that host the exhibition will receive a supply of "Cosmic Questions" educator guides for teachers, a train-the-trainers session for professional development providers, and a set of workshop templates that outlines an adaptable professional development syllabus.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdussault@cfa.harvard.edu. Phone: 617-496-7962.

Scientist(s): Ms. Mary Dussault Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Dr. Irene Porro Massachusetts Institute of Technology Cambridge, MA

Partner(s): Museum of Science Boston, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Oct 02	10 Oct 02	Museum of Science	Boston, MA	30	0	0
22 Oct 02	22 Oct 02	Museum of Science	Boston, MA	0	1,500	0
01 Nov 02	02 Nov 02	Museum of Science	Boston, MA	12	0	0
28 Jan 03	30 Jan 03	Midland Center for the Arts	Midland, MI	75	0	0

A152. Deep Impact: Educator Training

Theme(s): SSE

Msn/Prgm: Deep Impact[B51]

Description: The Deep Impact mission's science, engineering, and outreach teams presented educator training at workshops at national science teacher conventions. We also go into classrooms and give tours at the Jet Propulsion Laboratory. Educators are given background information on the mission, its technology, and comet science. Educational activity materials that match national standards generally accompany the presentations. Pre-service educators are part of this audience. Educators evaluated new activities, and special relationships are being formed with educators.

Contact: Ms. Maura Rountree-Brown, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Maura.Rountree-Brown@jpl.nasa.gov. Phone: 818-393-4897.

Scientist(s): Dr. Michael A'Hearn University of Maryland College Park, MD
 Mr. William Blume NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Lucy McFadden University of Maryland College Park, MD
 Mr. John McNamee NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Maura Rountree-Brown NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	25	0	0
02 May 03	02 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	21	0	0
06 May 03	06 May 03	Mount Wilson Institute	Pasadena, CA	12	0	0
28 Jul 03	28 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	10	0	0
06 Aug 03	06 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	59	0
11 Sep 03	11 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	2	38	0

A153. Deep Space Network Conference Workshops and Exhibits

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: A new activity was designed this year that appears on the back of an educational wall sheet and was demonstrated in several different conference or teacher training/workshop venues. This is a math-related activity demonstrating how the antennas of the Deep Space Network concentrate electromagnetic radio waves in a single direction. An extension introduces the inverse square law for older students.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s): Mr. Art Hammon NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Oct 02	21 Oct 02	Georgia Council of Teachers of Mathematics Conference	Eatonton, GA	16	1,500	0
13 Mar 03	15 Mar 03	International Technology Education Association Annual Conference	Nashville, TN	0	9	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	112	0
10 Apr 03	12 Apr 03	National Math Conference	San Antonio, TX	90	90	0

A154. Educator Workshops: Space Science Network Northwest

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: Space Science Network Northwest Broker/Facilitator personnel gave workshops at the National Science Teacher Association meeting in Portland in November 2002. Julie Lutz and Jack Horne (North Central Educational Service District, Wenatchee, WA) presented a workshop on "Moon Basics" for 20 elementary and middle school teachers. Julie Lutz presented a workshop on "Where Do Stars Come from and Where Do They Go?" for 45 middle and high school teachers.

Contact: Ms. Annalisa Churchill, University of Washington, Seattle, WA 98195. E-mail: chrchill@u.washington.edu. Phone: 206-543-0214.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	20	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	45	0	0

A155. Electronic Newsletter: "Bulletin for Educators in Space Science" (BESS)

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SSI B/F[B20]

Description: The NASA E/PO Broker/Facilitator at the SSI in Boulder, CO, has created the "Bulletin for Educators in Space Science" (BESS). The newsletter informs participants of space and Earth science-related opportunities in the western region (AZ, CA, CO, ND, NE, NM, NV, SD, UT), in addition to those with a national scope that may be of value to educators in these states. This is a monthly newsletter, with occasional special bulletins for time-critical opportunities. The SSI B/F tailors the newsletter to the participants' educational needs in teaching space and earth science by strongly encouraging participants to provide specific feedback on educational needs and opportunities in their areas. The first electronic BESS newsletter was distributed in September 2003 to over 1,000 educators.

Contact: Ms. Amy Wilkerson, Space Science Institute, Boulder, CO 80301. E-mail: awilkers@colorado.edu. Phone: 720-974-5833.

Primary URL: <http://www.spacescience.org>

A156. "Elements 2002": Follow-Up Educator Workshop

Theme(s): SEU

Msn/Prgm: HEASARC[B81], INTEGRAL[B85]

Description: A convening of the "Elements 2002" educator workshop that allows participants to review, discuss, and revise the classroom activities that were developed based on the original workshop material on the cosmic origin of the elements. Written comments from outside educator reviewers also were discussed.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Scientist(s):	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Suzanne Pleau-Kinnison	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Karen Smale	NASA Goddard Space Flight Center	Greenbelt, MD

Partner(s):	The New Curiosity Shop	Bethesda, MD
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Nov 02	23 Nov 02	Comfort Inn	College Park, MD	7	0	0

A157. Examining Einstein's Spacetime with Gravity Probe-B

Theme(s): SEU

Msn/Prgm: GP-B[B69]

Description: Gravity Probe-B (GP-B) educational outreach aims to distribute materials and inform educators about GP-B science and technology. The materials include a teacher's guide, lithograph set, and classroom poster. Presentations are made regularly at regional and national conferences throughout the school year, and a major outreach effort is made on the campus of Stanford University.

Lead: Mr. Shannon Range, Stanford University, Stanford, CA 94305. E-mail: www@relgyro.stanford.edu.

Contact: Ms. Jennifer Spencer, Stanford University, Stanford, CA 94305. E-mail: www@relgyro.stanford.edu.

Primary URL: <http://einstein.stanford.edu>

Scientist(s):	Dr. Francis Everitt	Stanford University	Stanford, CA
	Dr. Edward Ingraham	Stanford University	Stanford, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	0	435	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	0	170	0
10 Jan 03	16 Jan 03	American Association of Physics Teachers	Austin, TX	0	275	0
14 Mar 03	15 Mar 03	San Diego Science Educators Association Conference	San Diego, CA	0	56	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	630	0

06 Apr 03	06 Apr 03	Stanford University	Stanford, CA	0	1,100	0
12 Jul 03	12 Jul 03	Stanford University	Stanford, CA	0	200	0

A158. "Exploring the Solar System": Teacher Workshops

Theme(s): ASO, SSE

Msn/Prgm: Astromaterials Program[B57]

Description: "Exploring the Solar System" teacher workshops are collaborations between the scientist-educator team at NASA Johnson Space Center and other Solar System education groups that train teachers to use Solar System examples while teaching Earth science. The focus is on comparative planetology and the processes that operate on multiple planets. The workshops use a variety of NASA space science curriculum materials. The presentations take an interdisciplinary approach and include background information, hands-on and inquiry-based activities.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, Houston, TX 77058. E-mail: marilyn.lindstrom-1@nasa.gov. Phone: 281-483-5135.

Primary URL: <http://ares.jsc.nasa.gov/education>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Dr. Donald Bogard	NASA Johnson Space Center	Houston, TX
	Dr. Mark Cintala	NASA Johnson Space Center	Houston, TX
	Ms. Mary Drake	NASA Johnson Space Center	Houston, TX
	Mr. Charles Galindo	NASA Johnson Space Center	Houston, TX
	Dr. Everett Gibson	NASA Johnson Space Center	Houston, TX
	Mr. Michael Henry	Lockheed Martin Corporation	Houston, TX
	Mr. Martin Jiles	Lockheed Martin Corporation	Houston, TX
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Ms. Loresa Loftin	Lockheed Martin Corporation	Houston, TX
	Ms. Kathleen McBride	Lockheed Martin Corporation	Houston, TX
	Dr. David McKay	NASA Johnson Space Center	Houston, TX
	Dr. Gordon McKay	NASA Johnson Space Center	Houston, TX
	Dr. Richard Morris	NASA Johnson Space Center	Houston, TX
	Ms. Andrea Mosie	NASA Johnson Space Center	Houston, TX
	Ms. Cecilia Satterwhite	NASA Johnson Space Center	Houston, TX
	Dr. Craig Schwandt	Lockheed Martin Corporation	Houston, TX
	Ms. Anne Smith	Lockheed Martin Corporation	Houston, TX
	Dr. Kelly Snook	NASA Johnson Space Center	Houston, TX
	Dr. Eileen Stansbery	NASA Johnson Space Center	Houston, TX
	Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
	Ms. Lisa Vidonic	Lockheed Martin Corporation	Houston, TX
	Dr. Michael Zolensky	NASA Johnson Space Center	Houston, TX
Partner(s):	NASA Office of Education		Washington, DC

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	90	0	0
27 Oct 02	30 Oct 02	Geological Society of America Conference	Denver, CO	0	400	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	36	0	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	30	0	0
16 Mar 03	21 Mar 03	Lunar and Planetary Science Conference	League City, TX	0	175	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	15	175	0
05 Apr 03	05 Apr 03	Redd School	Houston, TX	0	40	0
08 Apr 03	08 Apr 03	NASA Johnson Space Center	Houston, TX	12	0	0
05 May 03	30 Sep 03	NASA Johnson Space Center	Houston, TX	6	0	0
03 Jun 03	03 Jun 03	University of Houston-Downtown	Houston, TX	17	0	0
03 Jun 03	04 Jun 03	Our Lady of the Lake University	San Antonio, TX	12	0	0

05 Jun 03	05 Jun 03	Space Center Houston	Houston, TX	17	0	0
27 Sep 03	27 Sep 03	McCullum High School	San Antonio, TX	15	0	0
07 Nov 03	09 Nov 03	Conference for the Advancement of Science Teaching	El Paso, TX	50	0	0

A159. Genesis Conference Workshops

Theme(s): SSE

Msn/Prgm: Genesis[B52]

Description: Genesis conference workshops are given to educators in order that they may gain information on the Genesis standards-based curriculum modules, information on science and the mission, and professional development.

Contact: Ms. Jacinta Behne, Mid-Continent Research for Education and Learning, Aurora, CO 80014. E-mail: jbehne@mcrel.org. Phone: 303-632-5605.

Primary URL: <http://genesissmission.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Nov 02	22 Nov 02	Colorado Science Convention	Denver, CO	26	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	26	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	28	0	0
15 Apr 03	16 Apr 03	National Organization of Black Chemists and Chemical Engineers Annual Conference	Indianapolis, IN	100	0	0
25 Apr 03	27 Apr 03	Kansas Association of Teachers of Science Kamp 2003	Rock Springs, KS	10	0	0
29 May 03	29 May 03	Institute for Global Environmental Strategies	Arlington, VA	40	0	0
23 Jul 03	25 Jul 03	McREL Rural Technology Institute	Rapid City, SD	31	0	0
11 Sep 03	11 Sep 03	Clark Planetarium	Salt Lake City, UT	60	0	0
13 Sep 03	15 Sep 03	U.S. Educational Seismology Network	Bloomington, IN	65	0	0

A160. GLAST High-Energy Classroom Teacher Workshops

Theme(s): SEU

Msn/Prgm: GLAST[B68]

Description: This activity is comprised of workshops for teachers in which GLAST materials are distributed and utilized. These materials include the "Active Galaxies" educator's guide, the Structure and Evolution of the Universe kit "Seeing and Exploring the Universe," and the TOPS "Far Out Math" guide. Many of these presentations are given by GLAST Educator Ambassadors.

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

Primary URL: <http://glast.sonoma.edu>

2nd URL: <http://glast.sonoma.edu/progam.html>

Scientist(s):	Dr. Lynn Cominsky	Sonoma State University	Rohnert Park, CA
	Mr. Tom Estill	Chabot Space and Science Center	Oakland, CA
	Dr. Zachary Peckler	University of California, Santa Cruz	Santa Cruz, CA
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Dr. Christine Anne Royce	Shippensburg University	Shippensburg, PA
	Ms. Sarah Silva	Sonoma State University	Rohnert Park, CA
	Mr. Jason Smith	Challenger Center for Space Science Education	Alexandria, VA
	Dr. David Thompson	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Oct 02	09 Oct 02	Challenger Center for Space Science Education	Alexandria, VA	98	0	0
12 Oct 02	12 Oct 02	University of Houston	Houston, TX	0	60	0
15 Oct 02	15 Oct 02	Garden State Convention Center	Somerset, NJ	40	0	0
06 Nov 02	06 Nov 02	Williamstown High School	Williamstown, NJ	93	0	0
14 Dec 02	14 Dec 02	Garden State Convention Center	Somerset, NJ	0	320	0

22 Jan 03	22 Jan 03	Fresno State University	Fresno, CA	12	0	0
21 Feb 03	21 Feb 03	Gleneagle Secondary School	Coquitlam, Canada	81	0	0
12 Mar 03	12 Mar 03	NASA Dryden Flight Research Center	Edwards, CA	60	0	0
22 Mar 03	22 Mar 03	Kean University	Union, NJ	48	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	24	0	0
04 Apr 03	05 Apr 03	American Association of Physics Teachers: Northern California-Nevada Section Spring Meeting	Rohnert Park, CA	60	0	0
10 Apr 03	12 Apr 03	National Math Conference	San Antonio, TX	35	0	0
11 Apr 03	12 Apr 03	American Association of Physics Teachers: Northeast Section Meeting	Williamstown, MA	40	20	0
26 Apr 03	26 Apr 03	Kansas Association of Teachers of Science	El Dorado, KS	14	0	0
02 May 03	02 May 03	Siena Heights University	Adrian, MI	97	0	0
25 Jun 03	26 Jun 03	Frontiers in Astrophysics	Norfolk, VA	55	0	0
25 Jun 03	29 Jul 03	Space Science XIX: Space Art and Science	Medford, MA	90	0	0
12 Jul 03	12 Jul 03	Simon Fraser University Burnaby Mountain Campus	Burnaby, Canada	17	0	0
19 Jul 03	19 Jul 03	Holton High School	Holton, KS	14	0	0
21 Jul 03	25 Jul 03	University of California, Santa Cruz	Santa Cruz, CA	10	0	0
28 Jul 03	30 Jul 03	Meeting Maine Learning Goals Through Math and Science	Augusta, ME	30	0	0

A161. Goldstone Apple Valley Radio Telescope (GAVRT): Educational Conference Workshops and Exhibits

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: Representatives from the GAVRT project attend educational conferences and other appropriate venues where either a GAVRT exhibit is displayed, and/or 1-hour workshops are given. Presentations featuring video, view-graphs, and discussion are a means of introducing grade 1-12 teachers to GAVRT with the goal of recruiting additional participants in the program.

Contact: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn/applevalley>

2nd URL: <http://www.gavrt.org>

Scientist(s): Dr. Rebecca Deutscher, Lewis Center for Educational Research, Apple Valley, CA

Mr. David McLaren, Lewis Center for Educational Research, Apple Valley, CA

Partner(s): Lewis Center for Educational Research, Apple Valley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	27	250	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	7	0	0
10 Apr 03	12 Apr 03	National Math Conference	San Antonio, TX	5	0	0
21 Apr 03	25 Apr 03	American Educational Research Association Annual Meeting	Chicago, IL	20	0	0

A162. Goldstone Apple Valley Radio Telescope (GAVRT): Teacher Training

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: In order to participate in the GAVRT project, teachers receive specialized training in radio astronomy, the GAVRT curriculum, and controlling the 34-meter antenna. Training sessions last 5 days and are held both in the Apple Valley facilities of the Lewis Center for Educational Research or in other venues, such as Auburn University in Alabama.

Contact: Ms. Kim Bunnell, Lewis Center for Educational Research, Apple Valley, CA 92307. E-mail: kim@lcer.org. Phone: 760-946-5414.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn/applevalley>

2nd URL: <http://www.gavrt.org>

Scientist(s):	Mr. Art Freiley	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Mark Hofstadter	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Klein	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. David McLaren	Lewis Center for Educational Research	Apple Valley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Nov 02	08 Nov 02	Lewis Center for Educational Research	Apple Valley, CA	13	0	0
18 Feb 03	21 Feb 03	Lewis Center for Educational Research	Apple Valley, CA	8	0	0
16 Jun 03	20 Jun 03	Lewis Center for Educational Research	Apple Valley, CA	16	0	0
28 Jul 03	30 Jul 03	Auburn University	Auburn, AL	4	0	0

A163. Hands-On Astronomy for Teachers

Theme(s): ASO, SEU, SSE

Msn/Prgm: SRT[B3]

Description: This workshop consisted of two parts. The first, held in July 2003, was a 1-week "astronomy boot camp" that included two daily 1-hour lectures by Dr. Nancy Morrison on various aspects of astronomy; planetarium shows; work on classroom activities supplied by the project; and teacher development of new classroom activities from source materials supplied by the planetarium. The new activities were presented to the group later in the week. The second part of the workshop consisted of eight monthly 3-hour Saturday morning sessions, of which the first was held in early September 2003. The purposes of the follow-up period are to: foster networking and group spirit among the teachers; enable them to become resource persons in their schools; and enable them to carry out a year-long individual or group project. Projects defined so far include guided research in spectroscopy with the 1-meter telescope and starting an astronomy club in the school. To our knowledge, the year-long follow-up and the small-group projects are unique features of this workshop.

Lead: Dr. Nancy Morrison, University of Toledo, Toledo, OH 43606. E-mail: ndm@astro1.panet.utoledo.edu. Phone: 419-530-2659.

Contact: Mr. Alexander Mak, University of Toledo, Toledo, OH 43606. E-mail: amak@astro.utoledo.edu. Phone: 419-530-2241.

Primary URL: <http://www.rpbo.utoledo.edu/ReachStars.html>

Scientist(s):	Dr. Nancy Morrison	University of Toledo	Toledo, OH
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Oct 02	11 Oct 02	University of Toledo	Toledo, OH	15	0	0
06 Dec 02	06 Dec 02	University of Toledo	Toledo, OH	15	0	0
17 Jan 03	17 Jan 03	University of Toledo	Toledo, OH	15	0	0
07 Feb 03	07 Feb 03	University of Toledo	Toledo, OH	15	0	0
13 Mar 03	13 Mar 03	University of Toledo	Toledo, OH	15	0	0
03 Apr 03	03 Apr 03	University of Toledo	Toledo, OH	15	0	0
08 May 03	08 May 03	University of Toledo	Toledo, OH	15	0	0
07 Jul 03	11 Jul 03	University of Toledo	Toledo, OH	14	0	0

A164. "Hidden Lives of Galaxies": Educator Workshop

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: A 1-hour workshop on properties of galaxies and the hidden mass problem.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Primary URL: <http://imagine.gsfc.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
17 Jul 03	17 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	22	0	0

A165. HST Cycle E/PO Grant: "Reach for the Stars"

Theme(s): ASO, SEU

Msn/Prgm: HST[B22]

Description: The goal of this project was to familiarize grade 6 teachers and students with the HST, the life cycle of stars, and the electromagnetic spectrum. The team designed and conducted training sessions for the teachers, who then implemented the unit with their class. The unit involves students in an inquiry-based, hands-on set of activities using HST images in the classroom and their own observations with DeMiguel Elementary School's 16-inch CCD-equipped telescope.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s): Mr. Ed Anderson Northern Arizona University Flagstaff, AZ
Dr. Philip Massey Lowell Observatory Flagstaff, AZ

Partner(s): DeMiguel Elementary School Flagstaff, AZ
Lowell Observatory Flagstaff, AZ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 02	30 Jul 03	DeMiguel Elementary School	Flagstaff, AZ	195	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	100	0

A166. IDEAS Grant: "Alien Rescue"—Problem-Based Learning in Astronomy

Theme(s): ASO, SEU, SSE

Msn/Prgm: IDEAS[B1]

Description: The program produced teacher resource materials and a teacher workshop to support a problem-based learning CD-ROM, "Alien Rescue," which has been under development by a team of students and faculty within the Department of Curriculum and Instruction in the University of Texas College of Education for the past 2 years. During pilot-testing of the materials in grade 6 classrooms, it was discovered that general classroom teachers did not have a deep enough understanding of Solar System astronomy to allow them to function as classroom facilitators. To aid in the design of the evaluation materials and increase the science content, some changes will be made in the product itself. The teacher resources and revised CD-ROM will be field-tested through a teacher workshop. During the second year of the project, classroom field-testing will be added. An extensive evaluation component is proposed. "Alien Rescue" was designed to provide a problem-based learning project tied to the Texas Essential Knowledge and Skills (state science framework).

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s): Dr. Mary Kay Hemenway University of Texas at Austin Austin, TX
Dr. Min Liu University of Texas at Austin Austin, TX
Dr. Susan Pedersen Texas A&M University College Station, TX

Partner(s): Texas A&M University College Station, TX
University of Texas at Austin Austin, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 May 00	31 Oct 02	University of Texas at Austin	Austin, TX	0	2666	0

A167. IDEAS Grant: Astronomy and the Solar System

Theme(s): ASO, SEU, SSE

Msn/Prgm: IDEAS[B1]

Description: During recent teacher workshops sponsored by the Texas Space Grant Consortium, grade 6 teachers expressed a need for additional training on astronomy and the Solar System. The statewide educational standards for Texas schools recently moved Solar System education to the grade 6 science curriculum. Teachers who have never taught about the Solar System or astronomy are now being required to include this into their classroom education. In order to increase the knowledge and comfort level of grade 6 teachers, a series of workshops were created and presented throughout the state. Utilizing the strengths of the collaborations

already existing with the Texas Space Grant Consortium, including 4-H, University of Texas Astronomy department, Texas Education Agency Educational Service Centers, and Solar System Educators, the program provided training and curriculum to grade 6 teachers. During the training, teachers actively participated in experiments and activities to increase their knowledge about components of the Solar System, stars, galaxies, tools of astronomy, structure of the Earth system, and physical characteristics of the planets. Teachers explored hands-on lessons that encourage cooperative learning and experiential education. Upon completion of the training, teachers will have access to the Texas Space Grant Consortium's online database of educational curriculum and activities to further enhance their teaching. Teachers also will have access to various evaluation methods, background information on astronomy and the Solar System, and additional resources.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s):	Dr. Wallace Fowler	Texas Space Grant Consortium	Austin, TX
	Dr. Judit Ries	University of Texas at Austin	Austin, TX
Partner(s):	4-H and Youth Development		Austin, TX
	Austin Independent School District		Austin, TX
	El Paso Independent School District		El Paso, TX
	Llano Junior High School		Llano, TX
	NASA Office of Education		Washington, DC
	Rio Grande Valley School District		McAllen, TX
	University of Texas at Austin		Austin, TX

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 May 01	20 Sep 02	University of Texas at Austin	Austin, TX	0	33,808	0

A168. IDEAS Grant: "Solar System Spacecraft Exploration"—Real- and Other-World Applications of Math, Science and Technology

Theme(s): ASO, SEU, SSE

Msn/Prgm: IDEAS[B1]

Description: In this program, a group of science teachers from across New York State participated in a 3-day workshop to design, develop and test an educational unit in astronomy focused on comparative study of the terrestrial planets of our Solar System. The goal was to excite teachers about NASA's spacecraft exploration of the Solar System and show them that space exploration is a "real-world" (or "other-world") application that they can use to spark interest in their math, science and technology students. The NASA missions highlighted were Mercury Messenger, Venus Magellan, Near-Earth Asteroid Rendezvous, and Mars Global Surveyor. The overarching questions asked during the workshop were: "How has Earth evolved differently from other planets?" and "How have NASA's spacecraft explorations served to answer that question?" The final product of the workshop was a lesson plan using NASA resources, incorporating input from teachers and astronomers. The lesson plan integrated mathematics, science and technology in the study of spacecraft exploration of the Solar System and guides teachers in facilitating inquiries from their students. The plan conforms to New York State science core curriculum requirements for intermediate- and commencement-level students.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Primary URL: http://baritone.astro.cornell.edu/~beth/idea_workshop

Scientist(s):	Dr. Beth Clark	Cornell University	Ithaca, NY
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Partner(s):	Cornell University	Ithaca, NY
	Sciencenter, Ithaca, NY	

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Aug 02	03 Aug 02	Cornell University	Ithaca, NY	21	0	0

A169. "Invisible Universe": Educator Workshops

Theme(s): SEU

Msn/Prgm: Swift Gamma Ray Burst Mission[B78]

Description: Swift Educator Ambassadors and E/PO professionals use materials developed by the Swift project to conduct teacher workshops at national, regional, and local conference venues. The GEMS guide "Invisible Universe:

From Radio Waves to Gamma Rays" is a frequent focus of these workshops.

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu.
Phone: 707-664-2655.

Primary URL: <http://swift.sonoma.edu>

2nd URL: <http://swift.sonoma.edu/program.html>

Scientist(s):	Dr. Lynn Cominsky	Sonoma State University	Rohnert Park, CA
	Mr. Tom Estill	Chabot Space and Science Center	Oakland, CA
	Dr. Eric Feigelson	Pennsylvania State University	University Park, PA
	Mr. Tim Graves	Sonoma State University	Rohnert Park, CA
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Dr. Christine Anne Royce	Shippensburg University	Shippensburg, PA
	Ms. Sarah Silva	Sonoma State University	Rohnert Park, CA
	Dr. Monica Sperandio	Brera Astronomical Observatory	Milano Italy
Partner(s):	Pennsylvania State University		University Park, PA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Oct 02	15 Oct 02	Garden State Convention Center	Somerset, NJ	40	0	0
19 Oct 02	19 Oct 02	Hardin Planetarium	Bowling Green, KY	16	0	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	0	25	0
20 Nov 02	20 Nov 02	Palatine High School	Palatine, IL	30	0	0
10 Jan 03	16 Jan 03	American Association of Physics Teachers	Austin, TX	256	720	0
22 Jan 03	22 Jan 03	Fresno State University	Fresno, CA	12	0	0
06 Feb 03	06 Feb 03	Brookfield Central High School	Brookfield, WI	44	0	0
17 Feb 03	17 Feb 03	Holton High School	Holton, KS	16	0	0
09 Mar 03	09 Mar 03	Wisconsin Society of Science Teachers	Oshkosh, WI	24	0	0
13 Mar 03	13 Mar 03	Commonwealth Scientific and Industrial Research Organization Science Education Centre	Canberra, Australia	50	0	0
13 Mar 03	13 Mar 03	Michigan Association for Computer Users in Learning	Holt, MI	0	58	0
22 Mar 03	22 Mar 03	Kean University	Union, NJ	40	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	105	0
02 Apr 03	05 Apr 03	National Congress on Aviation and Space Education	Cincinnati, OH	15	16	0
04 Apr 03	05 Apr 03	American Association of Physics Teachers: Florida Section Spring Meeting	St. Petersburg, FL	0	51	0
04 Apr 03	05 Apr 03	American Association of Physics Teachers: Northern California-Nevada Section Spring Meeting	Rohnert Park, CA	70	0	0
15 Apr 03	15 Apr 03	Rockhurst University	Kansas City, MO	24	0	0
29 Apr 03	29 Apr 03	Northern Kentucky University	Highland Heights, KY	15	0	0
13 May 03	13 May 03	Commonwealth Scientific and Industrial Research Organization Science Education Centre	Canberra, Australia	50	0	0
19 May 03	25 May 03	American Astronomical Society Meeting	Nashville, TN	0	500	0
23 May 03	23 May 03	Rockhurst University	Kansas City, MO	28	0	0
31 May 03	31 May 03	Challenger Learning Center of Kentucky	Hazard, KY	11	2	0
24 Jul 03	24 Jul 03	Western Kentucky University	Bowling Green, KY	22	6	0
27 Jul 03	01 Aug 03	Pennsylvania State University	University Park, PA	87	0	0
19 Aug 03	19 Aug 03	National Space Center	Leicester, United Kingdom	10	0	0
17 Sep 03	17 Sep 03	William Jewel College	Liberty, MO	26	0	0

A170. "Life Cycles of Stars" Workshop

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: This workshop traces the life span of stars, from their birth in clouds of gas and dust to their final end in novae or supernovae. We describe the processes of nucleosynthesis as the energy generation mechanism in

stars and discuss its balance against gravity. We describe the different ends for low-mass and high-mass stars, and show how some high-mass stars can “live again” in x-ray binary systems. Workshop featured “Tin Foil, Balloons, and Black Holes” activity.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Primary URL: <http://imagine.gsfc.nasa.gov>

Scientist(s):	Ms. Amanda Cook	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Sara Mitchell	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Feb 03	11 Feb 03	NASA Goddard Space Flight Center	Greenbelt, MD	22	0	0
04 Mar 03	04 Mar 03	Berks County Training Facility	Reading, PA	50	0	0
09 May 03	09 May 03	Ohio State University	Columbus, OH	240	0	0
05 Aug 03	05 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	20	0	0

A171. Living With a Star (LWS): Inservice Teachers Workshop

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: The STP/LWS activities for the inservice educator workshop on science literacy were prepared to give new teachers resources from NASA to improve their teaching skills in the classroom. Preservice teachers from New England, New York, and Pennsylvania participated in an intensive 5-day workshop.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>

2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s):	Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. DeLee Smith	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Jan 03	10 Jan 03	Springfield Professional Development Building	Springfield, MD	55	0	0
31 Mar 03	03 Apr 03	Springfield Professional Development Building	Springfield, MD	31	1	0

A172. Living With a Star (LWS): Master Teacher Leadership and Mentor Program

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: The STP/LWS Master Teacher Leadership and Mentor Program (MTLMP) is an opportunity for master teachers to get together and discuss strategies that will increase the participation of teachers around the nation in STP/LWS E/PO. Master teachers also give workshops on different topics such as online forum, creation of inquiry-based activities, assessment, interdisciplinary lessons plans, and the NASA resources available to improve science teaching and learning in the classroom around the country.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>

2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s):	Dr. Fernando Bird-Picó	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Ms. Elena Brimmer	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Ms. Sara Brown	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Frances Figarella	University of Puerto Rico at Rio Piedras	Rio Piedras, PR
	Dr. Charles Mercer	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Rafael Mojica	Puerto Rico Space Grant	San Juan, PR
	Dr. Rafael Montalvo	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Dr. Ada Monzón	Univision Puerto Rico Meteorology	San Juan, PR
	Dr. Arturo Portnoy	University of Puerto Rico at Mayagüez	Mayagüez, PR

Mr. Willy Santos	University of Puerto Rico at Rio Piedras	Rio Piedras, PR
Ms. DeLee Smith	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Lisette Velazquez-Rivera	University of Puerto Rico at Rio Piedras	Rio Piedras, PR

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 Jun 03	06 Jul 03	University of Puerto Rico at Rio Piedras	Rio Piedras, PR	33	6	0

A173. Living With a Star (LWS): Preservice Workshop

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: An STP/LWS 5-day workshop was held to help preservice teachers understand the benchmarks and use them as tools to build science curriculums that meet standards and use NASA resources. Preservice teachers brainstormed on topics such as what brings new teachers to the science field, pre-assessment and post-assessment, benchmarks, and standards. Participants also worked on developing activities for a lesson plan related to the Sun-Earth Connection theme using the backward design method and the benchmarks.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s):	Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. DeLee Smith	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Mar 03	04 Apr 03	Springfield High School of Science and Technology	Springfield, MA	52	0	0

A174. Mars Odyssey E/PO for the OSS Participating Scientist Program: Gamma-Ray and Neutron Spectrometer

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: The Los Alamos National Laboratory (LANL) Planetary Science Team is implementing an outreach program to increase public awareness and interest in the space sciences, provide an understanding of the science behind the gamma-ray spectrometer instrument of the 2001 Mars Odyssey mission, and promote the NASA and LANL space science efforts. The team partnered with the Los Alamos Space Science Outreach (LASSO) "Teach the Teachers" Workshop Program to develop learning materials and lesson plans for use at their educational institutions. The program educates teachers in the basics of nuclear physics, gamma-ray and neutron spectroscopy, and planetary science. The objectives of this project are to improve the overall quality of science, mathematics, and technology education in northern New Mexico by providing lecture and presentation material for LANL scientists to participate in school and museum programs; increase teachers' and students' knowledge of the science, math, and technology involved in space physics; enhance teacher skills in teaching the content of space physics; provide hands-on activities and materials to use at schools; expose teachers and students to the application of space physics to research at national laboratories; and provide a mechanism for teachers to encourage students to pursue careers in space physics and space science.

Lead: Dr. Thomas Prettyman, Los Alamos National Laboratory, Los Alamos, NM 87545. E-mail: thp@lanl.gov. Phone: 505-667-6449.

Primary URL: <http://set.lanl.gov/programs/lasso/standards.html>

Scientist(s):	Dr. William Feldman	Los Alamos National Laboratory	Los Alamos, NM
	Dr. Thomas Prettyman	Los Alamos National Laboratory	Los Alamos, NM

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Feb 02	11 Feb 02	University of Texas at El Paso	El Paso, TX	35	0	0
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	0	0
13 Feb 03	13 Feb 03	University of Arizona	Tucson, AZ	26	0	0
20 Feb 03	20 Feb 03	National Radio Astronomy Observatory	Socorro, NM	0	0	0

16 Mar 03	21 Mar 03	Lunar and Planetary Science Conference	League City, TX	0	0	0
22 May 03	22 May 03	Jemez Valley Elementary School	Jemez Springs, NM	53	0	0
06 Jun 03	06 Jun 03	Los Alamos National Laboratory	Los Alamos, NM	0	0	0
07 Jul 03	18 Jul 03	Los Alamos National Laboratory	Los Alamos, NM	12	0	0
20 Jul 03	20 Jul 03	KOB-TV, Channel 4/Albuquerque	Albuquerque, NM	0	0	0
20 Jul 03	20 Jul 03	KRSN Radio, 1490 AM/ Los Alamos	Los Alamos, NM	0	0	0
20 Jul 03	20 Jul 03	KSER Radio, 90.7 FM/ Santa Fe	Santa Fe, NM	0	0	0
20 Jul 03	20 Jul 03	Space.com	Washington, DC	0	0	0
20 Jul 03	24 Jul 03	International Conference on Mars	Pasadena, CA	0	0	0

A175. Mars: Formal Educator Field Trips

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars formal educator field trips take K–12 educators to sites on Earth that are similar to Mars for intensive exploration and comparison, using data from past and current Mars missions. The field trips typically last several days and are often a follow-up to other indepth professional development workshops for educators. Standards-aligned, hands-on, inquiry-based activities are presented interactively for use in the classroom to support science, technology, mathematics, and geology education. The complementary goals, science discoveries, and technological innovations of missions in the Mars Exploration Program are presented in relation to what we hope to learn about Mars through the long-term exploration of its climate and geology and its potential as a habitat for past, present, or future life. The educational knowledge and skills necessary to explore Mars are presented to assist educators in inspiring Mars explorers of the future. Classroom activities and resources are distributed to enhance the chance that they will be implemented in the classroom.

Contact: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.

Primary URL: <http://mars.jpl.nasa.gov/classroom>

2nd URL: <http://marsed.asu.edu>

Scientist(s):	Dr. Phil Christensen	Arizona State University	Tempe, AZ
	Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Vicky Hamilton	Arizona State University	Tempe, AZ
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Ms. Amy Knudson	Arizona State University	Tempe, AZ
	Mr. Scott Nowicki	Arizona State University	Tempe, AZ
	Ms. Paige Valderrama	Arizona State University	Tempe, AZ
	Mr. Barnaby Wasson	Arizona State University	Tempe, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
28 Feb 03	28 Feb 03	Granite Wash Mountains	Phoenix, AZ	26	0	0

A176. Mars: Formal Educator Workshops

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Nationwide educator workshops reach K-16 teachers with standards-aligned, inquiry-based activities.

Contact: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.

Primary URL: <http://mars.jpl.nasa.gov/classroom>

2nd URL: <http://marsed.asu.edu>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Mr. Scott Allison	Arizona State University	Tempe, AZ
	Dr. Bob Anderson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Raymond Arvidson	Washington University	St. Louis, MO
	Dr. Joshua Bandfield	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Jim Bell	Cornell University	Ithaca, NY
	Dr. Ken Berry	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Donald Bogard	NASA Johnson Space Center	Houston, TX
	Ms. Cassie Bowman	NASA Ames Research Center	Moffett Field, CA
	Mr. Christopher Burns	Arizona State University	Tempe, AZ

Dr. Natalie Cabrol	SETI Institute	Mountain View, CA
Dr. John Callas	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Wendy Calvin	University of Nevada, Reno	Reno, NV
Mr. Tom Campbell	South Dakota School of Mines and Technology	Rapid City, SD
Ms. Brooke Carson	Keystone Science School	Keystone, CO
Dr. Phil Christensen	Arizona State University	Tempe, AZ
Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Ken Edgett	Malin Space Science Systems	La Jolla, CA
Dr. Jack Farmer	Arizona State University	Tempe, AZ
Mr. Orlando Figueroa	NASA Office of Space Science	Washington, DC
Mr. Charles Galindo	NASA Johnson Space Center	Houston, TX
Dr. Jim Garvin	NASA Office of Space Science	Washington, DC
Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Everett Gibson	NASA Johnson Space Center	Houston, TX
Dr. Matthew Golombek	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Trevor Graff	Arizona State University	Tempe, AZ
Dr. John Grant	Smithsonian National Museum of Natural History	Washington, DC
Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Ken Herkenhoff	U.S. Geological Survey	Flagstaff, AZ
Ms. Meg Hufford	Arizona State University	Tempe, AZ
Dr. Hugh Keiffer	U.S. Geological Survey	Flagstaff, AZ
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Dr. Laurie Leshin	Arizona State University	Tempe, AZ
Mr. Randell Lindemann	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kathleen McBride	Lockheed Martin Corporation	Houston, TX
Ms. Elaina McCartney	Cornell University	Ithaca, NY
Dr. David McKay	NASA Johnson Space Center	Houston, TX
Dr. Gordon McKay	NASA Johnson Space Center	Houston, TX
Dr. Hap McSween	University of Tennessee,	Knoxville, TN
Ms. Nycole Miller	Arizona State University	Tempe, AZ
Dr. Douglas Ming	NASA Johnson Space Center	Houston, TX
Dr. Richard Morris	NASA Johnson Space Center	Houston, TX
Ms. Andrea Mosie	NASA Johnson Space Center	Houston, TX
Ms. Mary Mulvanerton	Cornell University	Ithaca, NY
Dr. Tom Myrick	Honeybee Robotics, Ltd.	New York, NY
Dr. Firouz Naderi	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Nowicki	Arizona State University	Tempe, AZ
Mr. Bill Nye	Cornell University	Ithaca, NY
Dr. Timothy Parker	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Sally Ride	Imaginary Lines, Inc.	Los Angeles, CA
Dr. Steve Ruff	Arizona State University	Tempe, AZ
Dr. Craig Schwandt	Lockheed Martin Corporation	Houston, TX
Dr. Steve Squyres	Cornell University	Ithaca, NY
Dr. Eileen Stansbery	NASA Johnson Space Center	Houston, TX
Dr. Woody Sullivan	University of Washington	Seattle, WA
Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
Mr. Keith Watt	Arizona State University	Tempe, AZ
Ms. Sally Watt	Arizona State University	Tempe, AZ
Dr. Catherine Weitz	NASA Office of Space Science	Washington, DC
Ms. Aimee Whalen	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Maria Zuber	Massachusetts Institute of Technology	Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	Arizona Science Teachers Association	Mesa, AZ	15	0	0
24 Oct 02	24 Oct 02	Bill Graham Convention Center	San Francisco, CA	25	0	0
16 Nov 02	16 Nov 02	Central Arizona Community College	Coolidge, AZ	73	0	0
16 Nov 02	16 Nov 02	St. Ambrose School	Old Bridge, NJ	12	400	0
11 Dec 02	11 Dec 02	San Diego County Office of Education	San Diego, CA	18	0	0
13 Dec 02	13 Dec 02	NASA Goddard Institute for Space Studies	New York, NY	45	0	0
10 Jan 03	10 Jan 03	Arizona State University	Tempe, AZ	15	0	0
24 Jan 03	24 Jan 03	Challenger Learning Center	Wheeling, WV	36	0	0
08 Feb 03	08 Feb 03	DePaul University, Lincoln Park Campus	Chicago, IL	150	0	0
27 Feb 03	27 Feb 03	Arizona State University	Tempe, AZ	29	0	0
01 Mar 03	01 Mar 03	Arizona State University	Tempe, AZ	66	0	0
18 Mar 03	18 Mar 03	Arizona State University	Tempe, AZ	26	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	56	175	0
05 May 03	30 Sep 03	NASA Johnson Space Center	Houston, TX	5	0	0
04 Jun 03	04 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	39	0	0
21 Jun 03	21 Jun 03	Astronaut Hall of Fame	Titusville, FL	26	0	0
24 Jun 03	24 Jun 03	Doubletree Hotel	Cocoa Beach, FL	114	0	0
25 Jul 03	25 Jul 03	Arizona State University	Tempe, AZ	13	0	0
28 Jul 03	30 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	60	0	0
29 Jul 03	29 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	18	0	0
23 Aug 03	23 Aug 03	Pensacola Junior College, Space and Science Theatre	Pensacola, FL	176	0	0
20 Sep 03	20 Sep 03	Arizona State University	Tempe, AZ	130	0	0
27 Sep 03	27 Sep 03	Arizona State University	Tempe, AZ	170	0	0

A177. Midwestern Science Teachers Meetings

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: DePaul B/F[B15]

Description: The primary goal of this activity is to advertise our presence as the regional point of contact: for K-12 educators. The secondary goal is to inform educators about new NASA space science E/PO materials. The activity is used to network with teachers and associations in ways that identify potential new program partners. Finally, these meetings are used to better understand the teachers being served and their needs.

Lead: Dr. James Sweitzer, DePaul University, Chicago, IL 60604. E-mail: jsweitze@depaul.edu. Phone: 773-325-4637.

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. James Sweitzer	DePaul University	Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Nov 02	09 Nov 02	Illinois State Teachers Association Annual Conference	Saint Charles, IL	139	0	0
11 Jan 03	11 Jan 03	DePaul University	Chicago, IL	204	0	0
19 Feb 03	21 Feb 03	Hoosier Association of Science Teachers Convention	Indianapolis, IN	26	199	0
08 Aug 03	08 Aug 03	Navy Pier	Chicago, IL	2	200	0

A178. NASA Astrobiology Institute (NAI)—Astrobiology for Teachers: An Online Graduate Course

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: NAI provides support for teachers across the United States to enroll in a semester-long graduate course in astrobiology. The course is one of several online courses offered by the University of Arizona in conjunction with the National Science Teacher Association Institute. The two main goals of the course are to (1) provide information on the central concepts related to the field of astrobiology, and (2) provide experiences using stu-

dent-centered and inquiry-based curriculum materials for teaching astrobiology that are aligned with national science education standards. The course materials are astrobiology texts in common use and a specially designed set of lab activities, "Life in the Universe: Activities Manual," Prather, Offerdahl, and Slater, 2003, published by Addison Wesley to accompany one of the primary texts. While the course is asynchronous, allowing participants to complete the work on their own schedule, teachers must log in daily and complete several group projects during the semester. The course is evaluated according to: (1) teacher-participant performance in the course overall, (2) teacher-participant performance on exams, and (3) teacher-participant comments on the course from the teachers' electronic community discussion groups.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Primary URL: <http://btc.montana.edu/ceres/astrobiology>

Partner(s): University of Arizona

Tucson, AZ

A179. NASA Earth and Space Education Workshop

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: The NASA Earth and Space Education Workshop provides professional development to NASA educators from the regions represented at the workshop. During this week-long training, the participants are provided science content briefings on current Earth and space science, and related education resources that have passed the OSS product review process which identifies exemplary products to be distributed through training workshops.

Lead: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Contact: Ms. Stacy Rudolph, Institute for Global Environmental Strategies, Arlington, VA 22209. E-mail: stacey_rudolph@strategies.org. Phone: 703-312-5069.

Scientist(s):	Mr. Ron Blom	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Benjamin Burrell	Chabot Space and Science Center	Oakland, CA
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. George Fisher	University of California, Berkeley	Berkeley, CA
	Mr. Brian Hawkins	NASA Ames Research Center	Moffett Field, CA
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Mr. Allen Larar	NASA Langley Research Center	Hampton, VA
	Ms. Melissa Maradiegue	NASA Ames Research Center	Moffett Field, CA
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Patricia Reiff	Rice University	Houston, TX
	Ms. Carole Rest	Space Telescope Science Institute	Baltimore, MD
	Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
	Dr. Simon Steel	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Dave Toll	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Jorge Vazquez	NASA Jet Propulsion Laboratory	Pasadena, CA
Partner(s):	NASA Office of Earth Science		Washington, DC
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Dec 02	14 Dec 02	NASA Goddard Space Flight Center	Greenbelt, MD	40	0	0

A180. NASA Johnson Space Center Curation Facility Tours for Educators

Theme(s): SSE

Msn/Prgm: Astromaterials Program[B57]

Description: The tours for visiting educators at NASA's Johnson Space Center focus on the Lunar Sample Laboratory Facility and the Antarctic Meteorite Curation Laboratory.

Lead: Ms. Jaclyn Allen, Lockheed Martin Corporation, Houston, TX 77058. E-mail: jaclyn.s.allen1@jsc.nasa.gov. Phone: 281-483-7389.

Primary URL: <http://www-curator.jsc.nasa.gov/curator>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Nov 02	05 Nov 02	NASA Johnson Space Center	Houston, TX	10	0	0
11 Apr 03	11 Apr 03	NASA Johnson Space Center	Houston, TX	15	0	0
12 Sep 03	12 Sep 03	NASA Johnson Space Center	Houston, TX	6	0	0
26 Sep 03	26 Sep 03	NASA Johnson Space Center	Houston, TX	6	0	0

A181. NASA Langley Research Center Pre-Service Teacher Institute

Theme(s): SEC, SSE

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], MARSSB[B17]

Description: The Preservice Teacher Institute is sponsored by NASA's Langley Research Center on an annual basis. It is targeted to provide professional development and opportunities for exposure to NASA resources to preservice faculty and their students associated with historically minority-serving institutions. The MARSSB provided speakers for two half-day workshops, demonstrating how NASA space science materials can be used effectively to provide an exciting context for learning scientific content at all grades and age levels. The participants also received information regarding the various OSS missions.

Lead: Ms. Paula Tucker-Hogan, NASA Langley Research Center, Hampton, VA 23681. E-mail: *p.tucker-hogan@larc.nasa.gov*. Phone: 757-468-2430.

Contact: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: *sjones@cet.edu*. Phone: 202-554-6487.

Primary URL: <http://sunearth.gsfc.nasa.gov>2nd URL: <http://teachspacescience.stsci.edu/cgi-bin/ssrtop.plex>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
28 Mar 03	28 Mar 03	NASA Langley Research Center	Hampton, VA	63	0	0

A182. National Center for Atmospheric Research High-Altitude Observatory: Teachers-in-Residence Program for K-12 Outreach

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: The National Center for Atmospheric Research (NCAR) High-Altitude Observatory (HAO) and the University Corporation for Atmospheric Research (UCAR) Office of Education and Outreach (EO) are collaborating to host K-12 teachers during the summer months over three consecutive years with a goal of developing resources about Sun-Earth science and computer modeling that support national and Colorado science content standards, with particular focus on content that can be illustrated by HAO's research mission. EO's education lead and HAO's science lead will facilitate the exchange of educational goals and scientific content between teachers and scientists. Products will include printed and Web-based information, modules, and/or activities complementing school districts' curricula.

Lead: Dr. Art Richmond, University Corporation for Atmospheric Research, Boulder, CO 80305. E-mail: *richmond@ucar.edu*. Phone: 303-497-1570.

Contact: Ms. Susan Foster, National Center for Atmospheric Research, Boulder, CO 80305. E-mail: *susanf@ucar.edu*. Phone: 303-497-2595.

Scientist(s):	Dr. Roberta Johnson	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Gang Lu	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Astrid Maute	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Art Richmond	University Corporation for Atmospheric Research	Boulder, CO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Jun 03	15 Sep 03	National Center for Atmospheric Research	Boulder, CO	7	0	0

A183. Navigator Community College Initiative

Theme(s): ASO

Msn/Prgm: Navigator[B27], KECK[B28], SIM[B31], TPF[B32]

Description: Over half of the astronomy instruction in the United States takes place at community colleges. Navigator's goal

is to reach and impact more than a third of the nation's 1,200 community colleges within a 3-year period. The core of Navigator's impact will be achieved through the involvement of a national Educator Advisory Board and a series of lecture/tutorials focused on: (1) techniques in astronomy, (2) tools and telescopes, and (3) the nature of light. The program is being rolled out through a series of "Teaching Excellence" workshops that will be enhanced by large national conferences devoted to improving the teaching of Astronomy 101 survey courses. A related initiative involves the expansion of a successful California research program for community college students known as the Consortium for Undergraduate Research Experiences.

Lead: Ms. Rhonda Jones, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rhonda.R.Jones@jpl.nasa.gov. Phone: 818-354-1562.

Primary URL: <http://planetquest.jpl.nasa.gov>

Scientist(s): Dr. Richard Alvidrez NASA Jet Propulsion Laboratory Pasadena, CA

Partner(s): University of Arizona Tucson, AZ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 May 03	20 May 03	Columbia University Biosphere 2 Center	Oracle, AZ	25	0	0
20 Jul 03	23 Jul 03	University of Hawaii at Manoa	Honolulu, HI	25	0	0
02 Aug 03	06 Aug 03	American Association of Physics Teachers	Madison, WI	0	1,200	0

A184. Navigator Educational Workshops and Conference Participation

Theme(s): ASO

Msn/Prgm: Navigator[B27], KECK[B28], LBT[B29], SIM[B31], TPF[B32]

Description: Navigator participates in educational conferences and workshops with exhibits, as well as demonstrations to engage K-12 educators in the ongoing research and discoveries related to extra-solar planet searching.

Lead: Ms. Jenny Tieu, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: jenny.t.tieu@jpl.nasa.gov. Phone: 818-393-4765.

Scientist(s): Dr. Richard Alvidrez NASA Jet Propulsion Laboratory Pasadena, CA
Mr. Art Hammon NASA Jet Propulsion Laboratory Pasadena, CA
Ms. Rhonda Jones NASA Jet Propulsion Laboratory Pasadena, CA
Ms. Jenny Tieu NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Oct 02	05 Oct 02	Estrella Mountain Community College	Avondale, AZ	6	0	0
18 Oct 02	21 Oct 02	Georgia Council of Teachers of Mathematics Conference	Eatonton, GA	26	3,000	0
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	33	0	0
25 Oct 02	30 Oct 02	Society for Mexican-American Engineers and Scientists	Anaheim, CA	0	105	0
31 Jan 03	31 Jan 03	Pasadena Unified School District	Pasadena, CA	40	0	0
10 Feb 03	10 Feb 03	California State University, Long Beach	Long Beach, CA	70	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	85	0	0
30 Mar 03	30 Mar 03	Celebra La Ciencia Latino Festival	Los Angeles, CA	0	1750	0
09 Apr 03	12 Apr 03	National Council of Teachers of Mathematics National Conference	San Antonio, TX	90	0	0
03 May 03	03 May 03	Space Education Initiatives	Green Bay, WI	16	0	0
17 Jun 03	18 Jun 03	California State University, Long Beach	Long Beach, CA	28	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	18	0	0

A185. New England Workshops in Space Science Education

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: Intensive workshops in space science education play a vital role in enhancing the content knowledge and pedagogical capabilities of educators. This year, NESSIE partnered with several workshop providers with the

aim of brokering greater involvement in E/PO by space scientists and facilitating more comprehensive services for K–12 teachers and community educators. Some workshops were based on the highly successful Project Astro and Family Astro models, where scientists and educators are trained together for subsequent collaborations in the classroom and other community venues. NESSIE agents also contributed to workshops hosted by the NASA Aerospace Educator Specialist Program, New England Space Grant Consortia, SEU Forum, Chandra X-Ray Observatory, the Wright Center for Science Education, the Maine Mathematics and Science Alliance, and WestEd.

Lead: Ms. Cathleen Clemens, Museum of Science, Boston, MA 02114-1099. E-mail: cclemens@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/nessie>

2nd URL: <http://hea-www.harvard.edu/astro/index.html>

Scientist(s):	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Dr. R. Hank Donnelly	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Salman Hameed	Smith College	Northampton, MA
	Dr. Raquel Morales	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Cary Sneider	Museum of Science	Boston, MA
	Dr. William Waller	Tufts University	Medford, MA

Partner(s): Maine Space Grant Consortium, Augusta, ME
NASA Office of Education

Washington, DC

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Oct 02	04 Oct 02	Maine Space Grant Consortium	Augusta, ME	30	0	0
18 Oct 02	18 Oct 02	Museum of Science	Boston, MA	35	0	0
04 Nov 02	06 Nov 02	Museum of Science	Boston, MA	70	0	0
03 Jan 03	03 Jan 03	Museum of Science	Boston, MA	2	0	0
11 Jan 03	11 Jan 03	Museum of Science	Boston, MA	30	0	0
28 Feb 03	28 Feb 03	Museum of Science	Boston, MA	12	0	0
22 Mar 03	22 Mar 03	Museum of Science	Boston, MA	40	0	0
01 Apr 03	01 Apr 03	Fall River Public Schools	Fall River, MA	28	0	0
27 Jun 03	28 Jun 03	Museum of Science	Boston, MA	35	0	0
11 Aug 03	15 Aug 03	St. Johnsbury Academy	St. Johnsbury, VT	55	0	0
20 Sep 03	20 Sep 03	Rhode Island Science Teachers Conference	Providence, RI	75	0	0

A186. "Our Star the Sun": Summer Institute

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: The "Our Star the Sun" Summer Institute is designed for K-16 science and nonscience educators, principals, and education college professors from the United States and Puerto Rico. Scientists, engineers, and educators present a wide variety of science educational activities related to the Sun-Earth Connection theme, oceanography, meteorology, math, and technology, all of which are aligned with science, math, engineering, and technology subjects.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>

2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s):	Dr. Jaime Acosta	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Dr. Carmen Bellido	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Dr. Carlos Betancourt	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Ms. Sara Brown	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Gilberto Colon	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Carol Jo Crannell	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Hall Crannell	Catholic University of America	Washington, DC
	Dr. Yasmin Detrés	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Ms. Sally Feldman	University of California, Berkeley	Berkeley, CA

Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Ricardo Goenaga	University of Puerto Rico at Mayagüez	Mayagüez, PR
Dr. Juan Gonzalez	University of Puerto Rico at Mayagüez	Mayagüez, PR
Dr. Fred Herrero	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Jose R. Lopez	University of Puerto Rico at Mayagüez	Mayagüez, PR
Dr. Rafael Montalvo	University of Puerto Rico at Mayagüez	Mayagüez, PR
Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Willy Santos	University of Puerto Rico at Rio Piedras	Rio Piedras, PR
Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
Ms. Maria Schwarz	University of Puerto Rico at Mayagüez	Mayagüez, PR
Mr. Donato Seguf	University of Puerto Rico at Mayagüez	Mayagüez, PR
Mr. Roberto Sepulveda	NASA Langley Research Center	Hampton, VA
Ms. DeLee Smith	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Jul 03	24 Jul 03	University of Puerto Rico at Mayagüez	Mayagüez, PR	73	4	0

A187. Overview of StarChild Web Site

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: A 1-hour overview of the StarChild Web site and activities.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.Primary URL: <http://starchild.gsfc.nasa.gov>

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
13 Mar 03	13 Mar 03	National Teacher Training Institute	Harrisonburg, VA	8	0	0

A188. Penn State Inservice Workshops in Astronomy

Theme(s): ASO, SEU

Msn/Prgm: CXO[B65]

Description: Under a Chandra Cycle-4 E/PO Grant, 35 teachers, primarily from rural districts in Pennsylvania, and several participants from the Department of Defense overseas schools attended one of three, 5-day inservice workshops offered for 2 hours of graduate credit at Pennsylvania State University. The three workshops were "Stars and Planets", "Galaxies and Cosmology", and "Space-Based Astronomy". Sessions included inquiry-based activities, research talks, content lectures, night-time telescope observing, roundtable discussions, and surveys of curricular resources.

Lead: Dr. Eric Feigelson, Pennsylvania State University, University Park, PA 16802. E-mail: edf@astro.psu.edu. Phone: 814-865-0418.

Contact: Dr. Christopher Palma, Pennsylvania State University, University Park, PA 16802.

Primary URL: <http://astro.psu.edu/piswa>

Scientist(s):	Dr. Neil Brandt	Pennsylvania State University	University Park, PA
	Dr. Eric Feigelson	Pennsylvania State University	University Park, PA
	Dr. Ann Hornschemeir	Johns Hopkins University	Baltimore, MD
	Dr. John Nousek	Pennsylvania State University	University Park, PA
	Dr. Christopher Palma	Pennsylvania State University	University Park, PA
	Dr. Leisa Townsley	Pennsylvania State University	University Park, PA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Jul 03	18 Jul 03	Pennsylvania State University	University Park, PA	16	0	0
21 Jul 03	25 Jul 03	Pennsylvania State University	University Park, PA	9	0	0
28 Jul 03	01 Aug 03	Pennsylvania State University	University Park, PA	10	0	0

A189. Project AstroBio

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: Project AstroBio has expanded on the success of Project ASTRO/Seattle, a science E/PO program administered by the University of Washington (UW) astronomy department since 1997. Project ASTRO created over 100 partnerships (and has sustained 65 of those) between grade 3-12 teachers and professional and amateur astronomer and Earth and space scientists in the Puget Sound region of Washington. This year was our second as Project AstroBio. We began last summer with the training workshop for teacher and science partners who would work together in the 2002–2003 school year. Now that we are fully functioning as Project AstroBio, we will be training a new group of 22 teacher/scientist partners for the 2003-2004 school year and beyond. The partnerships will work together in the classroom, providing resource expertise and hands-on science activities as an adjunct to the regular teaching schedule. In each Project AstroBio partnership, students are guided through inquiry-based, hands-on activities in topics relevant to astrobiology. Project AstroBio activities are rigorously designed to meet national and state education standards. In 2002–2003, astrobiology researchers and graduate students Jesse Dillon, Jeremy Dodsworth, Monika Kress, John Leigh, and Steve Vance joined Project AstroBio as new science partners. They each visited an assigned classroom between five and seven times, thereby having a direct impact on the science education of nearly 200 K–12 students.

Contact: Dr. Woody Sullivan, University of Washington, Seattle, WA 98195. E-mail: woody@astro.washington.edu.Primary URL: <http://www.astro.washington.edu/projastro>

Scientist(s): Dr. Woody Sullivan University of Washington Seattle, WA

A190. Resources for Teaching About Life on Earth and Beyond: National Science Teachers Association Short Course

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: This year's National Science Teachers Association astrobiology short course was organized by Lisa Brown and Angela Phelps. The program consisted of a mix of hands-on activities presented by E/PO personnel and content presentations by scientists. The presenters included scientists Lorraine Olendzenski, Catherine Tsairides, Jackie Allen, Marilyn Lindstrom, Krisztina Wilmoth, Darlene Gadd, Jim Kasting, Andrew Steele, and Pamela Harmon, as well as educators Daniella Scalice and Kay Tabola. Fifty middle and high school teachers participated.

Lead: Ms. Krisztina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.Contact: Dr. Lisa Brown, Pennsylvania State University, University Park, PA 16802. E-mail: lisabrown@psu.edu.

Scientist(s):	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Dr. Lisa Brown	Pennsylvania State University	University Park, PA
	Ms. Darlene Gadd	NASA Astrobiology Institute	Moffett Field, CA
	Ms. Pamela Harman	SETI Institute	Mountain View, CA
	Dr. James Kasting	Pennsylvania State University	University Park, PA
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Dr. Lorraine Olendzenski	Marine Biological Laboratory	Woods Hole, MA
	Ms. Angela Phelps	Pennsylvania State University	University Park, PA
	Dr. Andrew Steele	Carnegie Institution of Washington	Washington, DC
	Ms. Catherine Tsairides	NASA Ames Research Center	Moffett Field, CA
	Dr. Krisztina Wilmoth	NASA Ames Research Center	Moffett Field, CA

Event(s):

Dates		Location	Participants		
Start Date	End Date	Venue	City, State	DIR	ANON WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference		0	50 0
			Philadelphia, PA		

A191. RHESSI Teacher Professional Development

Theme(s): SEC, SEU

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], CHIPS[B72], STEREO[B96], FAST[B99], RHESSI[B102]

Description: The RHESSI E/PO program provides professional development opportunities for science teachers. These opportunities range from workshops at teacher conferences to activities and tours of the Space Sciences Laboratory

at the University of California, Berkeley. In these programs we disseminate curriculum materials developed for RHESSI, as well as other space science curriculum materials.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: http://cse.ssl.berkeley.edu/hessi_epo

Scientist(s):	Dr. Manfred Bester	University of California, Berkeley	Berkeley, CA
	Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Ms. Darlene Park	University of California, Berkeley	Berkeley, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
	Mr. Igor Ruderman	University of California, Berkeley	Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	50	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	20	0	0
19 Jul 03	19 Jul 03	University of California, Berkeley	Berkeley, CA	15	0	0
21 Jul 03	21 Jul 03	University of California, Berkeley	Berkeley, CA	6	0	0

A192. "Rocks from Space": Teacher Workshops

Theme(s): ASO, SSE

Msn/Prgm: SRT[B3], Astromaterials Program[B57]

Description: "Rocks from Space" teacher workshops are collaborations between scientists at NASA's Johnson Space Center and Texas educators to train other educators in using extraterrestrial materials to teach Earth and space science, chemistry, and physics. The workshops use the NASA "Exploring the Moon" and "Exploring Meteorite Mysteries" teacher guides and Johnson's more advanced "Space Rocks Tell Their Secrets" module. The presentations include background information, hands-on activities, and inquiry-based research activities.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, Houston, TX 77058.

E-mail: marilyn.lindstrom-1@nasa.gov. Phone: 281-483-5135.

Primary URL: <http://ares.jsc.nasa.gov>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Ms. Mary Drake	NASA Johnson Space Center	Houston, TX
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Dr. Penny Morris-Smith	University of Houston-Downtown	Houston, TX
	Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
Partner(s):	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	60	200	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	11	0	0
09 Jun 03	20 Jun 03	NASA Johnson Space Center	Houston, TX	6	0	0

A193. Scientist Shadowing

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: Teachers from the Anne Arundel County Summer Academy (Maryland) shadowed scientists for 2–3 hours each day of the week. Scientists showed them the work that they do, ranging from data analysis to laboratory experiments in optics.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Scientist(s): Dr. Michael Corcoran NASA Goddard Space Flight Center Greenbelt, MD
 Dr. Georgia DeNolfo NASA Goddard Space Flight Center Greenbelt, MD
 Mr. Scott Owens NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Jul 03	18 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	6	0	0

A194. SOFIA , SETI , and Kepler Mission Conference Exhibit Booth

Theme(s): ASO, SEU

Msn/Prgm: Kepler[B24], SOFIA[B26]

Description: The Stratospheric Observatory for Infrared Astronomy (SOFIA) Education and Outreach program co-exhibits with complementary education programs of the SETI Institute and the Kepler Mission at regional and national science teachers conferences, and also at conferences of planetarium and science center organizations. The exhibit consists of: 1) an infrared camera demonstration, 2) literature on the education and science programs of SOFIA, the SETI Institute, and the Kepler Mission, and 3) staff members who answer questions and interact with visitors.

Lead: Ms. Edna DeVore, SETI Institute, Mountain View, CA 94043. E-mail: edevore@seti.org. Phone: 650-960-4538.

Contact: Ms. Pamela Harman, SETI Institute, Mountain View, CA 94043. E-mail: pharman@seti.org. Phone: 650-960-4523.

Primary URL: http://sofia.arc.nasa.gov/Edu/calendar/edu_calendar.html

Scientist(s): Dr. Dana Backman NASA Ames Research Center Moffett Field, CA
 Ms. Marita Beard SETI Institute Mountain View, CA
 Mr. Michael Bennett Astronomical Society of the Pacific San Francisco, CA
 Ms. Edna DeVore SETI Institute Mountain View, CA
 Ms. Pamela Harman SETI Institute Mountain View, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	0	500	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	5,000	0

A195. Solar System Educator Program (SSEP)

Theme(s): SSE

Msn/Prgm: Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39]

Description: The NASA Jet Propulsion Laboratory Solar System Educators Program is a professional development program for teachers with the goal of inspiring America's educators and students by engaging them in NASA's Solar System exploration efforts. NASA provides these educators with the knowledge, skills, materials, and support that they need to effectively lead educator workshops throughout their region. As a result, the SSEP is a growing community of educators that is passionate about Solar System exploration and its impact on science education. This community is motivated to share that passion with other educators.

Contact: Eric Brunzell, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: eric@spaceed.org. Phone: 920-405-0751.

Primary URL: <http://www.ssep.org>

Scientist(s): Dr. David Black Lunar and Planetary Institute Houston, TX
 Mr. David Black Mountainland Applied Technology College Orem, UT
 Mr. Francis Gardner Columbus State University Columbus, GA
 Mr. Martin Horejsi Idaho State University Pocatello, ID
 Dr. Louis Irwin University of Texas at El Paso El Paso, TX
 Ms. Jennifer Linrud Wichita Collegiate School Wichita, KS
 Mr. Dan Malerbo Carnegie Science Center Pittsburgh, PA
 Dr. Flavio Mendez Maryland Science Center Baltimore, MD
 Mr. Eric Thomas East Kentucky Science Center Prestonsburg, KY
 Ms. Ellen Van Pay Martin Luther King Elementary School Green Bay, WI
 Mr. Ken Wilson Science Museum of Virginia Richmond, VA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Sep 02	23 Mar 03	Christa McAuliffe Planetarium	Concord, NH	525	0	0
01 Oct 02	02 Oct 02	Mesa Community and Conference Center	Mesa, AZ	12	0	0
01 Oct 02	30 Nov 02	Carnegie Science Center	Pittsburgh, PA	414	0	0
01 Oct 02	30 Nov 02	Carnegie Science Center	Pittsburgh, PA	58	0	0
01 Oct 02	30 Nov 02	Carnegie Science Center	Pittsburgh, PA	100	0	0
02 Oct 02	02 Oct 02	Idaho State University	Pocatello, ID	10	0	0
02 Oct 02	02 Oct 02	Idaho State University	Pocatello, ID	13	0	0
03 Oct 02	03 Oct 02	Carnegie Science Center	Pittsburgh, PA	175	0	0
03 Oct 02	03 Oct 02	Idaho State University	Pocatello, ID	23	0	0
03 Oct 02	03 Oct 02	Southern Idaho University	Twin Falls, ID	35	0	0
05 Oct 02	05 Oct 02	Jackson High School	Jackson, MI	20	0	0
08 Oct 02	08 Oct 02	Saginaw Valley State University	Chesterfield Township, MI	30	0	0
08 Oct 02	08 Oct 02	Saginaw Valley State University	Chesterfield Township, MI	19	0	0
09 Oct 02	09 Oct 02	Saginaw Valley State University	Chesterfield Township, MI	38	0	0
09 Oct 02	09 Oct 02	Saginaw Valley State University	Chesterfield Township, MI	30	0	0
10 Oct 02	10 Oct 02	Blue Springs School District	Blue Springs, MO	13	0	0
10 Oct 02	10 Oct 02	Carnegie Science Center	Pittsburgh, PA	83	0	0
11 Oct 02	11 Oct 02	Illinois State University	Normal, IL	8	0	0
11 Oct 02	11 Oct 02	Mid-Continent Public Library	Liberty, MO	20	0	0
12 Oct 02	12 Oct 02	University of Hawaii - Windward Community College	Kaneohe, HI	29	0	0
15 Oct 02	15 Oct 02	Mesa Community and Conference Center	Mesa, AZ	20	0	0
15 Oct 02	15 Oct 02	Salt Lake Convention Center	Salt Lake City, UT	60	0	0
15 Oct 02	31 Oct 02	Vernondale Elementary School	Erie, PA	265	0	0
18 Oct 02	18 Oct 02	New England Association of Technology Teachers	Nashua, NH	16	0	0
19 Oct 02	19 Oct 02	Millcreek Education Center	Erie, PA	340	0	0
21 Oct 02	21 Oct 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
22 Oct 02	22 Oct 02	Kealakehe High School	Kailua-Kona, HI	18	0	0
22 Oct 02	22 Oct 02	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
24 Oct 02	24 Oct 02	University of Nevada Las Vegas	Las Vegas, NV	37	0	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	22	0	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	73	0	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	9	0	0
24 Oct 02	26 Oct 02	National Science Teachers Association Regional Conference	Louisville, KY	35	0	0
25 Oct 02	25 Oct 02	Camp Calvin Crest	Fremont, NE	25	0	0
26 Oct 02	26 Oct 02	Lawrence Technological University	Southfield, MI	21	0	0
27 Oct 02	27 Oct 02	University of Washington	Seattle, WA	42	0	0
28 Oct 02	28 Oct 02	Idaho State University	Pocatello, ID	12	0	0
28 Oct 02	28 Oct 02	Mississippi Science Teacher Area Convention	Jackson, MS	24	0	0
29 Oct 02	29 Oct 02	Idaho State University	Pocatello, ID	22	0	0
29 Oct 02	29 Oct 02	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
31 Oct 02	31 Oct 02	Southern Idaho University	Twin Falls, ID	32	0	0
02 Nov 02	02 Nov 02	Warner Robbins Air Force Base Museum	Warner Robbins, GA	26	0	0
02 Nov 02	06 Nov 02	Eastern Washington University	Cheney, WA	75	0	0
05 Nov 02	05 Nov 02	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
06 Nov 02	06 Nov 02	University of Wisconsin-Green Bay	Green Bay, WI	40	0	0
06 Nov 02	06 Nov 02	University of Wisconsin-Green Bay	Green Bay, WI	40	0	0
07 Nov 02	07 Nov 02	North Hills Junior High School	Pittsburgh, PA	171	0	0
07 Nov 02	07 Nov 02	Shawano Church	Shawano, WI	75	0	0

08 Nov 02	08 Nov 02	Camino Real Hotel	El Paso, TX	30	0	0
08 Nov 02	08 Nov 02	Illinois Science Teachers Association	St Charles, IL	2	0	0
08 Nov 02	08 Nov 02	University of Nevada Las Vegas	Las Vegas, NV	42	0	0
09 Nov 02	09 Nov 02	Pioneer Ridge Sixth Grade Center	Independence, MO	150	0	0
09 Nov 02	09 Nov 02	Punahou School	Honolulu, HI	500	0	0
09 Nov 02	09 Nov 02	University of Texas at El Paso	El Paso, TX	11	0	0
10 Nov 02	10 Nov 02	Mississippi Science Teacher Area Convention	Jackson, MS	4	0	0
11 Nov 02	11 Nov 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
12 Nov 02	12 Nov 02	Millcreek Elementary School	Erie, PA	10	0	0
13 Nov 02	13 Nov 02	Grantham Village School	Grantham, NH	13	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	63	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	36	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	61	0	0
14 Nov 02	17 Nov 02	National Science Teachers Association Regional Conference	Portland, OR	75	0	0
16 Nov 02	16 Nov 02	University of Delaware	Dover, DE	13	0	0
19 Nov 02	19 Nov 02	Christa McAuliffe Planetarium	Concord, NH	7	0	0
22 Nov 02	22 Nov 02	Kansas Cosmosphere and Space Center	Hutchinson, KS	23	0	0
23 Nov 02	23 Nov 02	Cernan Earth and Space Center	River Grove, IL	14	0	0
25 Nov 02	25 Nov 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
27 Nov 02	27 Nov 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
01 Dec 02	31 Dec 02	Carnegie Science Center	Pittsburgh, PA	269	0	0
01 Dec 02	31 Dec 02	Carnegie Science Center	Pittsburgh, PA	81	0	0
01 Dec 02	31 Dec 02	Carnegie Science Center	Pittsburgh, PA	39	0	0
02 Dec 02	02 Dec 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
05 Dec 02	05 Dec 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
06 Dec 02	06 Dec 02	Mississippi Space Grant Consortium	University, MS	34	0	0
06 Dec 02	06 Dec 02	University of Washington	Seattle, WA	14	0	0
07 Dec 02	07 Dec 02	Carnegie Science Center	Pittsburgh, PA	17	0	0
07 Dec 02	07 Dec 02	University of Washington	Seattle, WA	9	0	0
11 Dec 02	11 Dec 02	Boynton Beach Community High School	Boynton Beach, FL	7	0	0
12 Dec 02	12 Dec 02	Albuquerque Convention Center	Albuquerque, NM	30	0	0
14 Dec 02	14 Dec 02	Carnegie Science Center	Pittsburgh, PA	18	0	0
14 Dec 02	14 Dec 02	WWNN Radio, AM 1470/Boca Raton	Boca Raton, FL	0	100	0
19 Dec 02	19 Dec 02	Vernondale Elementary School	Erie, PA	54	0	0
20 Dec 02	20 Dec 02	Sugar Sand Community Park	Boca Raton, FL	80	0	0
20 Dec 02	20 Dec 02	WWNN Radio, AM 1470/Boca Raton	Boca Raton, FL	0	100	0
23 Dec 02	23 Dec 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
27 Dec 02	27 Dec 02	Washington University	St. Louis, MO	42	0	0
28 Dec 02	28 Dec 02	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
01 Jan 03	01 Jan 03	Carnegie Science Center	Pittsburgh, PA	237	0	0
01 Jan 03	01 Jan 03	Carnegie Science Center	Pittsburgh, PA	66	0	0
04 Jan 03	04 Jan 03	Kapiolani Community College	Honolulu, HI	270	0	0
06 Jan 03	06 Jan 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
09 Jan 03	09 Jan 03	Eastman Community Association	Grantham, NH	53	0	0
10 Jan 03	10 Jan 03	University of Hawaii - Windward Community College	Kaneohe, HI	240	0	0
14 Jan 03	14 Jan 03	Christa McAuliffe Planetarium	Concord, NH	4	0	0
17 Jan 03	17 Jan 03	Sugar Sand Community Park	Boca Raton, FL	80	0	0
18 Jan 03	18 Jan 03	Mid-Pacific Institute	Honolulu, HI	88	0	0
18 Jan 03	18 Jan 03	Sugar Sand Community Park	Boca Raton, FL	20	0	0
22 Jan 03	22 Jan 03	Coca-Cola Space Science Center	Columbus, GA	6	0	0
25 Jan 03	25 Jan 03	Science Museum of Minnesota	St. Paul, MN	34	0	0
25 Jan 03	25 Jan 03	University of Hawaii at Hilo	Hilo, HI	800	0	0

26 Jan 03	26 Jan 03	Onizuka Space Center	Kailua-Kona, HI	169	0	0
28 Jan 03	28 Jan 03	Medill Tech and Professional Development Center	Chicago, IL	12	0	0
28 Jan 03	28 Jan 03	Mid-Continent Public Library	Liberty, MO	25	0	0
31 Jan 03	31 Jan 03	Elkhorn Elementary School	Elkhorn, KY	45	0	0
31 Jan 03	31 Jan 03	Elkhorn Elementary School	Elkhorn, KY	44	0	0
01 Feb 03	28 Feb 03	Grosse Pointe North High School	Grosse Pointe, MI	288	0	0
02 Feb 03	02 Feb 03	Idaho State University	Pocatello, ID	15	0	0
03 Feb 03	03 Feb 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
04 Feb 03	04 Feb 03	Idaho State University	Pocatello, ID	15	0	0
04 Feb 03	05 Feb 03	Paintsville Independent Elementary School	Paintsville, KY	68	0	0
07 Feb 03	07 Feb 03	Idaho State University	Pocatello, ID	15	0	0
07 Feb 03	07 Feb 03	Space Center Houston	Houston, TX	51	0	0
07 Feb 03	07 Feb 03	University of Utah	Salt Lake City, UT	22	0	0
07 Feb 03	07 Feb 03	WWNN Radio, AM 1470/Boca Raton	Boca Raton, FL	100	0	0
08 Feb 03	08 Feb 03	Idaho State University	Pocatello, ID	16	0	0
08 Feb 03	08 Feb 03	Idaho State University	Pocatello, ID	15	0	0
08 Feb 03	08 Feb 03	Mountainland Applied Technology College	Orem, UT	5	0	0
09 Feb 03	09 Feb 03	Idaho State University	Pocatello, ID	16	0	0
10 Feb 03	10 Feb 03	Medill Tech and Professional Development Center	Chicago, IL	27	0	0
11 Feb 03	11 Feb 03	Christa McAuliffe Planetarium	Concord, NH	9	0	0
13 Feb 03	13 Feb 03	West Boynton Beach Library	Boynton Beach, FL	100	0	0
15 Feb 03	15 Feb 03	Boynton Beach Community High School	Boynton Beach, FL	22	0	0
15 Feb 03	15 Feb 03	University of Alaska, Fairbanks	Fairbanks, AK	16	0	0
17 Feb 03	17 Feb 03	Eastern Washington University	Cheney, WA	17	0	0
17 Feb 03	17 Feb 03	Neil Armstrong Elementary School	Bethel Bank, PA	6	0	0
17 Feb 03	24 Feb 03	Ashwaubenon High School	Ashwaubenon, WI	23	0	0
18 Feb 03	18 Feb 03	Medill Tech and Professional Development Center	Chicago, IL	10	0	0
19 Feb 03	19 Feb 03	Boynton Beach Community High School	Boynton Beach, FL	15	0	0
19 Feb 03	19 Feb 03	Eastern Washington University	Cheney, WA	20	0	0
19 Feb 03	19 Feb 03	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
20 Feb 03	20 Feb 03	Eastern Washington University	Cheney, WA	23	0	0
22 Feb 03	22 Feb 03	Interface Science Center	Osage Beach, MO	50	0	0
22 Feb 03	22 Feb 03	Salt Lake Community College	Salt Lake City, UT	18	0	0
26 Feb 03	26 Feb 03	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
27 Feb 03	27 Feb 03	Orem Elementary School	Orem, UT	6	0	0
01 Mar 03	31 Mar 03	Carnegie Science Center	Pittsburgh, PA	42	0	0
01 Mar 03	31 Mar 03	Carnegie Science Center	Pittsburgh, PA	185	0	0
05 Mar 03	05 Mar 03	University of Maryland, Baltimore County	Baltimore, MD	15	0	0
08 Mar 03	08 Mar 03	Mountainland Applied Technology College	Orem, UT	6	0	0
09 Mar 03	11 Mar 03	Wisconsin Society of Science Teachers Convention	Wisconsin Dells, WI	60	0	0
09 Mar 03	11 Mar 03	Wisconsin Society of Science Teachers Convention	Wisconsin Dells, WI	30	0	0
10 Mar 03	10 Mar 03	Pauline Glenn Springs Elementary School	Pauline, SC	82	0	0
11 Mar 03	11 Mar 03	Christa McAuliffe Planetarium	Concord, NH	4	0	0
13 Mar 03	13 Mar 03	International Technology Education Association	Nashville, TN	22	0	0
13 Mar 03	13 Mar 03	University of Nevada Las Vegas	Las Vegas, NV	32	0	0
14 Mar 03	14 Mar 03	Old Westbury Long Island	Old Westbury, NY	60	0	0
15 Mar 03	15 Mar 03	Boynton Beach Community High School	Boynton Beach, FL	20	0	0
15 Mar 03	15 Mar 03	Loyola College	Baltimore, MD	5	0	0
15 Mar 03	15 Mar 03	Michigan Science Teachers Association	Grand Rapids, MI	17	0	0
20 Mar 03	20 Mar 03	St. John Baptist Catholic School	Sandy, UT	7	0	0
21 Mar 03	21 Mar 03	University of New Hampshire	Durham, NH	36	0	0
23 Mar 03	23 Mar 03	Scott Township Library	Carnegie, PA	81	0	0

24 Mar 03	24 Mar 03	Whitehall Elementary School	Anderson, SC	22	0	0
25 Mar 03	25 Mar 03	Exeter Elementary School	Exeter, NH	3	0	0
26 Mar 03	26 Mar 03	Pennsylvania Convention Center	Philadelphia, PA	59	0	0
26 Mar 03	26 Mar 03	Pennsylvania Convention Center	Philadelphia, PA	46	0	0
26 Mar 03	26 Mar 03	University of Wisconsin-Green Bay	Green Bay, WI	38	0	0
27 Mar 03	27 Mar 03	Pennsylvania Convention Center	Philadelphia, PA	57	0	0
27 Mar 03	27 Mar 03	Pennsylvania Convention Center	Philadelphia, PA	88	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	150	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	117	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	122	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	30	0	0
28 Mar 03	28 Mar 03	Pennsylvania Convention Center	Philadelphia, PA	18	0	0
29 Mar 03	29 Mar 03	Maine University	Orono, ME	80	0	0
01 Apr 03	16 Jun 03	Carnegie Science Center	Pittsburgh, PA	297	0	0
01 Apr 03	16 Jun 03	Carnegie Science Center	Pittsburgh, PA	540	0	0
01 Apr 03	16 Jun 03	Carnegie Science Center	Pittsburgh, PA	264	0	0
02 Apr 03	02 Apr 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
05 Apr 03	05 Apr 03	W.M. Keck Observatory	Kamuela, HI	20	0	0
06 Apr 03	06 Apr 03	Carnegie Science Center	Pittsburgh, PA	14	0	0
11 Apr 03	11 Apr 03	WWNN Radio, AM 1470/Boca Raton	Boca Raton, FL	0	182	0
12 Apr 03	12 Apr 03	Pennsylvania State University	University Park, PA	9	0	0
22 Apr 03	22 Apr 03	Andover High School	Andover, MN	30	0	0
25 Apr 03	25 Apr 03	Sally Ride Festival	Kansas City, MO	20	0	0
26 Apr 03	26 Apr 03	French Academy High School	French Camp, MS	50	0	0
26 Apr 03	27 Apr 03	Kansas Association of Teachers of Science	Junction City, KS	75	0	0
26 Apr 03	28 Apr 03	Ball State University	Muncie, IN	800	0	0
28 Apr 03	28 Apr 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
29 Apr 03	01 May 03	Courtyard by Marriott	Pasadena, CA	18	0	0
02 May 03	02 May 03	The Bistro	El Paso, TX	36	0	0
03 May 03	03 May 03	Prince Kuhio Mall	Hilo, HI	2,400	0	0
05 May 03	05 May 03	George Caleb Bingham Seventh Grade Center	Independence, MO	235	0	0
05 May 03	05 May 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
06 May 03	06 May 03	Loretto Academy	El Paso, TX	44	0	0
06 May 03	12 May 03	Ashwaubenon High School	Ashwaubenon, WI	23	0	0
10 May 03	10 May 03	Museum of Science and History	Jacksonville, FL	5	0	0
13 May 03	14 May 03	Medill Tech and Professional Development Center	Chicago, IL	1	0	0
15 May 03	15 May 03	Poinciana Elementary School	Boynton Beach, FL	40	0	0
19 May 03	19 May 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
28 May 03	28 May 03	Central Connecticut State University	New Britain, CT	32	0	0
29 May 03	31 May 03	Cross Ranch State Park	Bismarck, ND	82	0	0
01 Jun 03	20 Jun 03	Christa McAuliffe Planetarium	Concord, NH	901	0	0
01 Jun 03	20 Jun 03	Christa McAuliffe Planetarium	Concord, NH	419	0	0
02 Jun 03	02 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	32	0	0
02 Jun 03	02 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	21	0	0
02 Jun 03	02 Jun 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
04 Jun 03	04 Jun 03	Medill Tech and Professional Development Center	Chicago, IL	4	0	0
06 Jun 03	06 Jun 03	Christa McAuliffe Planetarium	Concord, NH	25	0	0
06 Jun 03	06 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	9	0	0
07 Jun 03	07 Jun 03	Cernan Earth and Space Center	River Grove, IL	80	0	0
08 Jun 03	11 Jun 03	Ashwaubenon High School	Ashwaubenon, WI	72	0	0
09 Jun 03	09 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	38	0	0

09 Jun 03	12 Jun 03	Dreyfoos School of the Arts	West Palm Beach, FL	20	0	0
10 Jun 03	10 Jun 03	Abilene Independent School District	Abilene, TX	7	0	0
12 Jun 03	12 Jun 03	Morehead State University	Morehead, KY	10	0	0
12 Jun 03	12 Jun 03	University of Nevada Las Vegas	Las Vegas, NV	29	0	0
15 Jun 03	15 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	26	0	0
16 Jun 03	16 Jun 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
16 Jun 03	19 Jun 03	John I. Leonard High School	Greenacres, FL	15	0	0
19 Jun 03	21 Jun 03	Ball State University	Muncie, IN	400	0	0
20 Jun 03	29 Aug 03	Carnegie Science Center	Pittsburgh, PA	259	0	0
20 Jun 03	29 Aug 03	Carnegie Science Center	Pittsburgh, PA	130	0	0
23 Jun 03	23 Jun 03	Weaver High School	Hartford, CT	34	0	0
23 Jun 03	27 Jun 03	New Mexico Museum of Space History	Alamogordo, NM	13	0	0
25 Jun 03	25 Jun 03	New Haven University	West Haven, CT	14	0	0
30 Jun 03	30 Jun 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
30 Jun 03	30 Jun 03	Sci-Fi Overdrive Radio Program	Boca Raton, FL	0	6,000	0
01 Jul 03	01 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	4	0	0
01 Jul 03	28 Aug 03	Christa McAuliffe Planetarium	Concord, NH	941	0	0
01 Jul 03	28 Aug 03	Christa McAuliffe Planetarium	Concord, NH	668	0	0
07 Jul 03	09 Jul 03	Christa McAuliffe Planetarium	Concord, NH	8	0	0
08 Jul 03	08 Jul 03	Ball State University	Muncie, IN	58	0	0
09 Jul 03	09 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	36	0	0
09 Jul 03	11 Jul 03	Kauai Children's Discovery Museum	Kapaa, HI	16	0	0
11 Jul 03	11 Jul 03	Pacific University Education Department	Eugene, OR	12	0	0
15 Jul 03	15 Jul 03	Onalaska High School	LaCrosse, WI	17	0	0
17 Jul 03	17 Jul 03	NASA Johnson Space Center	Houston, TX	32	0	0
17 Jul 03	17 Jul 03	Onalaska High School	LaCrosse, WI	17	0	0
18 Jul 03	18 Jul 03	French Academy High School	French Camp, MS	217	0	0
18 Jul 03	18 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	18	0	0
19 Jul 03	20 Jul 03	Onizuka Space Center	Kailua-Kona, HI	475	0	0
21 Jul 03	21 Jul 03	Christa McAuliffe Planetarium	Concord, NH	8	0	0
21 Jul 03	21 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	16	0	0
21 Jul 03	25 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	14	0	0
21 Jul 03	25 Jul 03	University of Washington	Seattle, WA	24	0	0
23 Jul 03	23 Jul 03	Onalaska High School	LaCrosse, WI	23	0	0
23 Jul 03	27 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	15	0	0
24 Jul 03	24 Jul 03	Oregon High School	Oregon, WI	23	0	0
24 Jul 03	25 Jul 03	Area Education Agency	Cedar Falls, IA	24	0	0
28 Jul 03	28 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	14	0	0
28 Jul 03	28 Jul 03	New Mexico Museum of Space History	Alamogordo, NM	10	0	0
29 Jul 03	30 Jul 03	Desert Pines High School	Las Vegas, NV	24	0	0
31 Jul 03	01 Aug 03	Cairo Durham School District	Cairo, NY	32	0	0
04 Aug 03	04 Aug 03	Eastern Washington University	Cheney, WA	3	0	0
05 Aug 03	06 Aug 03	Desert Pines High School	Las Vegas, NV	18	0	0
08 Aug 03	08 Aug 03	Christa McAuliffe Planetarium	Concord, NH	36	0	0
12 Aug 03	12 Aug 03	McHenry County College	McHenry, IL	9	0	0
12 Aug 03	14 Aug 03	University of Wisconsin Parkside	Racine, WI	27	0	0
15 Aug 03	15 Aug 03	Ball State University	Muncie, IN	80	0	0
15 Aug 03	15 Aug 03	Carnegie Science Center	Pittsburgh, PA	158	0	0
20 Aug 03	20 Aug 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
21 Aug 03	21 Aug 03	Planetary Studies Foundation	Crystal Lake, IL	70	0	0
27 Aug 03	27 Aug 03	Monacan High School	Chesterfield, VA	17	0	0
27 Aug 03	27 Aug 03	Monacan High School	Chesterfield, VA	7	0	0
27 Aug 03	27 Aug 03	Science Museum of Virginia	Richmond, VA	700	0	0
27 Aug 03	27 Aug 03	Stone Crest Golf Course	Prestonburg, KY	800	0	0
28 Aug 03	28 Aug 03	Science Museum of Virginia	Richmond, VA	125	0	0
29 Aug 03	29 Aug 03	Onizuka Space Center	Kailua-Kona, HI	8	0	0
01 Sep 03	01 Sep 03	Sci-Fi Overdrive Radio Program	Boca Raton, FL	0	6,000	0

02 Sep 03	02 Sep 03	Iverson Elementary School	Las Vegas, NV	100	0	0
04 Sep 03	04 Sep 03	Morehead State University	Morehead, KY	400	0	0
04 Sep 03	04 Sep 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
06 Sep 03	06 Sep 03	Stone Crest Golf Course	Prestonburg, KY	400	0	0
22 Sep 03	29 Sep 03	Ashwaubenon High School	Ashwaubenon, WI	22	0	0
23 Sep 03	23 Sep 03	Texas Space Grant Consortium	Austin, TX	12	0	0
26 Sep 03	26 Sep 03	Sugar Sand Community Park	Boca Raton, FL	100	0	0
29 Sep 03	29 Sep 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
29 Sep 03	29 Sep 03	Sci-Fi Overdrive Radio Program	Boca Raton, FL	0	6,000	0
11 Oct 03	11 Oct 03	Challenger Learning Center, University of Tennessee	Chattanooga, TN	38	0	0
07 Dec 03	07 Dec 03	Meadowdale Middle School	Lynnwood, WA	11	0	0

A196. Solar Wind Activities for the Los Alamos Space Science Outreach Program

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: Dr. Peter Gary worked with the Los Alamos Space Science Outreach (LASSO) "Teach the Teachers" Workshop Program to develop learning materials and lesson plans for educational institutions. The program educates teachers in several areas of space science including plasma physics. The objectives of this project are to improve the overall quality of science, mathematics and technology education in northern New Mexico by providing lecture and presentation material for Los Alamos National Laboratory (LANL) scientists to participate in school and museum programs; increasing teacher and student knowledge of the science, math, and technology involved in space physics; enhancing space physics instruction; providing hands-on activities and materials to use at schools; exposing teachers and students to the application of space physics to research at national laboratories; and providing a mechanism for teachers to encourage students to pursue careers in space physics and space science.

Lead: Dr. S. Peter Gary, Los Alamos National Laboratory, Los Alamos, NM 87545. E-mail: pgary@lanl.gov. Phone: 505-667-3807.

Contact: Ms. Laurie Hixson, Los Alamos National Laboratory, Los Alamos, NM 87545. E-mail: lhixson@lanl.gov. Phone: 505-667-0911.

Primary URL: <http://set.lanl.gov/programs/lasso/lassomain.htm>

Scientist(s): Dr. Peter Gary, Los Alamos National Laboratory, Los Alamos, NM

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Jul 03	18 Jul 03	Los Alamos National Laboratory	Los Alamos, NM	29	0	0

A197. Space Science for Illinois and Indiana Teachers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: DePaul B/F[B15]

Description: The major goal of Space Science for Illinois and Indiana Teachers (a 2-week professional development program) was to bring together local space scientists and teachers so that each will benefit from the experiences of the others. The objectives are to strengthen teachers' abilities in science instruction and curriculum design, and to continue the development of a cadre of teacher-leaders who can connect space science resources to their school systems and partner with space scientists and educators in the development of space science educational products. The group of scientists, teachers, and educators spent 1 week at Yerkes Observatory and 1 week at DePaul University engaging in science presentations, small group follow-up discussions, hands-on activities, and archival research in the summer of 2002. Teachers incorporated results from the program in their 2002–2003 classroom and planned a space science fair for their students that took place at DePaul in the spring of 2003 and is reported under the "To Mars with MER" activity.

Lead: Dr. Lynn Narasimhan, DePaul University, Chicago, IL 60604. E-mail: cnarasim@depaul.edu. Phone: 773-325-1854.

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Dr. Carolyn Narasimhan	DePaul University	Chicago, IL
	Dr. James Sweitzer	DePaul University	Chicago, IL

Event(s):

Dates		Location	Participants		
Start Date	End Date	Venue	City, State	DIR	ANON WEB19
Oct 02	19 Oct 02	DePaul University	Chicago, IL	19	0 0
12 Mar 03	12 Mar 03	DePaul University	Chicago, IL	10	0 0

A198. Space Science Workshops for Educators

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], NESSIE B/F[B18], SSI B/F[B20], Cassini/Huygens Probe[B37], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], 2001 Mars Odyssey[B41]

Description: The Space Science Institute (SSI) delivers workshops (1 hour to 1 week in duration) for classroom, outdoor, and museum educators who wish to use Sun-Earth Connections, planetary science, astrobiology, and basic astronomy as engaging contexts for learning age-appropriate, standards-based concepts in science and mathematics. SSI is also developing the capacity for workshops in Earth system science. SSI workshops generally include background science content, inquiry-based pedagogy, and hands-on practice with exemplary lesson plans. Workshops often combine science education with an artistic dimension, such as music, movement, poetry, or visual art, and in this way take a diverse approach to knowing and learning. SSI educator workshops have been offered at a variety of venues for both formal and informal educators, including professional society meetings, science education conferences, conferences for outdoor educators, community events, and host sites for SSI's traveling science exhibits (MarsQuest and the Space Weather Center). SSI also provides space science education training for the Mile-Hi Council of Girl Scouts troop leaders, Colorado MESA (Math, Engineering, and Science Achievement) after-school program leaders, and the Astronomical Society of the Pacific's Project ASTRO site leaders. The SSI Broker/Facilitator program uses educator workshops to (1) make new contact:s in the region, (2) raise awareness of NASA Space Science E/PO products and events, and (3) assess educational needs in the region.

Lead: Dr. Cherilynn Morrow, Space Science Institute, Boulder, CO 80301. E-mail: camorrow@colorado.edu. Phone: 720-974-5828.Primary URL: <http://www.spacescience.org>

Scientist(s):	Ms. Sanlyn Buxner	Fiske Planetarium	Boulder, CO
	Ms. Isidoros Doxas	University of Colorado, Boulder	Boulder, CO
	Ms. Mary Dussault	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Christy Edwards	Space Science Institute	Boulder, CO
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Dr. Cary Sneider	Museum of Science	Boston, MA
	Mr. Greg Vogt	NASA Johnson Space Center	Houston, TX
	Ms. Connie Walker	National Optical Astronomy Observatory	Tucson, AZ
	Ms. Amy Wilkerson	Space Science Institute	Boulder, CO
	Mr. Robert Wilson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Mike Zawaski	Space Science Institute	Boulder, CO

Partner(s):	Aspen Center for Environmental Studies	Aspen, CO
	Boonshoft Museum of Discovery	Dayton, OH
	Colorado Math, Science and Engineering Achievement	Denver, CO
	Coronado Technology Group	Tucson, AZ
	Discover Center Science Museum	Fort Collins, CO
	Exploratorium	San Francisco, CA
	Fiske Planetarium	Boulder, CO
	Girl Scouts, Mile Hi Council	Denver, CO
	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Lafayette Natural History Museum and Planetarium	Lafayette, LA
	Liberty Science Center	Jersey City, NJ
	Museum of Natural History	Providence, RI
	NASA Goddard Space Flight Center	Greenbelt, MD
	NASA Jet Propulsion Laboratory	Pasadena, CA
	NASA Office of Space Science	Washington, DC

National Optical Astronomy Observatory
Pima Community College

Tucson, AZ
Tucson, AZ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Oct 02	11 Oct 02	Astronomical Society of the Pacific	San Francisco, CA	82	0	0
12 Oct 02	12 Oct 02	Discover Center Science Museum	Fort Collins, CO	0	200	0
12 Oct 02	15 Oct 02	Association of Science and Technology Centers Conference	Charlotte, NC	0	35	0
25 Oct 02	26 Oct 02	Lafayette Natural History Museum and Planetarium	Lafayette, LA	56	0	0
01 Nov 02	02 Nov 02	National Optical Astronomy Observatory	Tucson, AZ	60	0	0
09 Nov 02	09 Nov 02	Girl Scouts, Mile Hi Council	Denver, CO	8	0	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	22	0	0
06 Feb 03	06 Feb 03	Museum of Natural History	Providence, RI	0	30	0
07 Feb 03	08 Feb 03	Liberty Science Center	Jersey City, NJ	61	0	0
30 May 03	31 May 03	Boonshoft Museum of Discovery	Dayton, OH	4	0	0
12 Jun 03	13 Jun 03	Challenger Learning Center	Peoria, AZ	12	12	0
21 Jul 03	21 Jul 03	U.S. Air Force Academy	Colorado Springs, CO	13	0	0
28 Jul 03	28 Jul 03	Exploratorium	San Francisco, CA	20	0	0
11 Aug 03	12 Aug 03	Aspen Center for Environmental Studies	Aspen, CO	40	0	0
12 Sep 03	12 Sep 03	Colorado Math, Science, and Engineering Achievement	Denver, CO	80	0	0

A199. SPIDR Teacher Professional Development Workshops

Theme(s): SEU

Msn/Prgm: CHIPS[B72], SPIDR[B76], RHESSI[B102]

Description: SPIDR E/PO personnel conduct professional development workshops for both inservice and preservice science teachers. These workshops are offered at locations around the country and feature inquiry-based classroom materials on scientific topics being investigated by the SPIDR mission.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu.
Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu.
Phone: 510-643-2178.

Scientist(s): Dr. Bryan Mendez University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Jun 03	06 Jun 03	New Mexico Museum of Natural History and Science	Albuquerque, NM	40	0	0

A200. Spitzer Space Telescope and SOFIA Online Course

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: The Spitzer Space Telescope and SOFIA sponsor an online course about the invisible Universe. The course is available as part of a master's degree in science education from the University of Arizona. Spitzer provides tuition support for teachers to take the course for continuing education credits. The course is a full graduate-level course which lasts for an entire semester.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu.
Phone: 626-395-8670.

Scientist(s): Dr. Timothy Slater University of Arizona Tucson, AZ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 02	01 Sep 03	University of Arizona	Tucson, AZ	150	0	0

A201. Spitzer Space Telescope Educator Workshops

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: The Spitzer Space Telescope presents short courses and workshops at national and regional teacher meetings. At the short courses, teachers get 4 hours of training and a pre-packaged kit of curriculum materials. Evaluation and feedback are solicited after the event.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

Scientist(s):	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	50	0	0
02 May 03	02 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	30	0	0

A202. STARLAB Training for Teachers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: The goal of this program is to train K–12 teachers, undergraduate and graduate astronomy faculty, graduate teaching assistants, and other educators in the use of the portable STARLAB planetarium. The training program includes a review of appropriate astronomy curriculum materials for use in the classroom. Interdisciplinary opportunities and national science standards are reviewed in the curriculum.

Lead: Ms. Mary Kadooka, Hawaii Space Grant Consortium, Honolulu, HI 96822. E-mail: kadooda@ifa.hawaii.edu. Phone: 808-956-7954.

Primary URL: <http://www.ifa.hawaii.edu>2nd URL: <http://doe.k12.hi.us/index.html>

Partner(s):	Bishop Museum	Honolulu, HI
	Hawaii Public Schools, Honolulu, HI	
	University of Hawaii at Manoa, Honolulu, HI	

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Feb 03	01 Feb 03	University of Hawaii at Manoa	Honolulu, HI	19	0	0
01 Mar 03	01 Mar 03	University of Hawaii at Manoa	Honolulu, HI	6	0	0

A203. STP/LWS Education Programs and Workshops

Theme(s): SEC

Msn/Prgm: STP[B91]

Description: The NASA Education and Outreach Workshop for Scientists and Engineers was held in February 2003 at the Arecibo Observatory in Puerto Rico. The 4-day workshop brought together NASA scientists and engineers with educators and staff at the Arecibo Observatory/National Astronomy and Ionosphere Center (NAIC) with a view to further NASA's role in education. The first workshop of its kind, it was organized by Dr. José Alonso, director of the visitor center of the observatory, and Dr. Evelina Félicité-Maurice of the STP/LWS E/PO program at NASA's Goddard Space Flight Center. Goddard's Sun-Earth Connection and Green Bank National Radio Astronomy Observatory collaborated on a 6-day astronomy STP/LWS institute for educators. Participants were exposed to cutting-edge workshops on Sun-Earth science and technology, radio astronomy, Radio Jove, and Telescope in Education (TIE).

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://stp.gsfc.nasa.gov>2nd URL: <http://lws.gsfc.nasa.gov>

Scientist(s):	Mr. Jose Alonso	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Dr. Daniel Atschuler	Arecibo Observatory	Arecibo, PR
	Dr. Yasmin Detrés	University of Puerto Rico at Mayagüez	Mayagüez, PR
	Dr. Juan Gonzalez	University of Puerto Rico at Mayagüez	Mayagüez, PR

Dr. Sue Ann Heatherly	Green Bank National Radio Astronomy Observatory	Green Bank, WV
Dr. Susan Hoban	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Jay Lockman	Green Bank National Radio Astronomy Observatory	Green Bank, WV
Dr. Jose R. Lopez	University of Puerto Rico at Mayagüez	Mayagüez, PR
Dr. Ada Monzón	Univision Puerto Rico Meteorology	San Juan, PR
Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Tom Troland	University of Kentucky	Lexington, KY
Dr. Keith Wayland	University of Puerto Rico at Rio Piedras	Rio Piedras, PR
Dr. Brad Weiner	University of Puerto Rico at Rio Piedras	Rio Piedras, PR

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Feb 03	08 Feb 03	Arecibo Observatory	Arecibo, PR	0	20	0
15 Apr 03	15 Apr 03	Holyoke Magnet Middle School for the Arts	Holyoke, MA	0	212	0
13 Jul 03	19 Jul 03	Green Bank National Radio Astronomy Observatory	Green Bank, WV	27	0	0

A204. SEU Educator Ambassadors

Theme(s): SEU

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], CXO[B65], Constellation-X[B67], GLAST[B68], GP-B[B69], LISA[B70], CHIPS[B72], GALEX[B74], RXTE[B75], SWAS[B77], Swift Gamma Ray Burst Mission[B78], WMAP[B79], ACCESS[B80], HETE-2[B83], Astro-E2[B84], INTEGRAL[B85], XMM-Newton[B86]

Description: The SEU Educator Ambassador program consists of three educators who work in conjunction with different NASA scientists and E/PO team members at Sonoma State University (SSU) to develop workshops and curriculum materials. The SEU Ambassadors disseminate curricular materials via workshops and conferences at the national, state, and local levels. Such interactions allow for direct feedback on the quality and effectiveness of E/PO materials and programs, as well as affording a high-leverage opportunity to teach additional teachers to use NASA mission materials in their classrooms.

Lead: Ms. Sandy Field-Daly, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: sdaly@cfa.harvard.edu. Phone: 617-496-4784.

Contact: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

Primary URL: <http://cfa-www.harvard.edu/seuforum>2nd URL: <http://universe.sonoma.edu>

Scientist(s):	Mr. Tom Estill	Chabot Space and Science Center	Oakland, CA
	Dr. Christine Anne Royce	Shippensburg University	Shippensburg, PA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Feb 02	05 Feb 02	Grand Amway Conference Center	Grand Rapids, MI	55	0	0
25 Sep 02	25 Sep 02	Michigan Virtual University	Lansing, MI	20	0	0
11 Oct 02	11 Oct 02	Northern Michigan University	Marquette, MI	102	35	0
21 Oct 02	21 Oct 02	Fresno State University	Fresno, CA	2	23	0
07 Nov 02	07 Nov 02	Shippensburg University	Shippensburg, PA	17	0	0
18 Nov 02	18 Nov 02	Long Beach Convention Center	Long Beach, CA	30	0	0
21 Nov 02	21 Nov 02	Fresno State University	Fresno, CA	4	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	40	0
21 May 03	21 May 03	Chabot Space and Science Center	Oakland, CA	4	20	0
25 Jun 03	29 Jul 03	Space Science XIX: Space Art and Science	Medford, MA	46	0	0
25 Jun 03	29 Jul 03	Space Science XIX: Space Art and Science	Medford, MA	46	0	0
21 Jul 03	21 Jul 03	Chabot Space and Science Center	Oakland, CA	2	20	0
29 Sep 03	29 Sep 03	Lindsay Wildlife Museum	Walnut Creek, CA	36	0	0

A205. Sun-Earth Connection Education Forum (SECEF) Pre-service Teacher Education

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: SECEF, a partnership between the University of California, Berkeley, and NASA Goddard Space Flight Center, has developed teacher education efforts to meet the needs of preservice educators for all grade levels. Scientists and education specialists present inquiry-oriented, age-appropriate activities and the most recent and relevant Sun-Earth connection science to a broad audience of future teachers—including undergraduate students and teaching credential candidates. These preservice teachers become active learners and improve both their content knowledge and pedagogy in Sun-Earth connection science. Preservice teacher education provides a unique opportunity to affect a significant number of teachers at the outset of their careers, when there is great potential for lasting results.

Lead: Dr. Greg Schultz, University of California, Berkeley, Berkeley, CA 94720. E-mail: schultz@ssl.berkeley.edu. Phone: 510-643-0012.

Contact: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Primary URL: <http://sunearth.ssl.berkeley.edu>

2nd URL: <http://sunearth.gsfc.nasa.gov>

Scientist(s):	Mr. Kevin Beals	University of California, Berkeley	Berkeley, CA
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Albert Davison	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Barbara Lambert	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Doug Millar	University of California, Berkeley	Berkeley, CA
	Dr. Kathleen O'Sullivan	San Francisco State University	San Francisco, CA
	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
	Dr. Isabel Quita	San Francisco State University	San Francisco, CA
	Mr. Donald Robinson-Boonstra	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
	Dr. Richard Sedlock	San Jose State University	San Jose, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
17 Oct 02	17 Oct 02	San Francisco State University	San Francisco, CA	21	0	0
23 Oct 02	23 Oct 02	San Francisco State University	San Francisco, CA	51	0	0
11 Nov 02	11 Nov 02	Alaska Pacific University	Anchorage, AK	23	0	0
29 Jan 03	02 Feb 03	Association for the Education of Teachers of Science	St. Louis, MO	20	0	0
04 Mar 03	04 Mar 03	Lyndon State College	Lyndon, VT	30	0	0
29 Apr 03	29 Apr 03	California State University, Hayward	Hayward, CA	53	0	0
01 Aug 03	01 Aug 03	Lawrence Berkeley National Laboratory	Berkeley, CA	26	0	0

A206. SECEF Professional Development: Sharing Sun-Earth Connections with Inservice Teachers

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], CHIPS[B72], STEREO[B96], FAST[B99], RHESSI[B102]

Description: SECEF, a partnership between the University of California, Berkeley, and NASA's Goddard Space Flight Center, has created professional development workshops to meet the needs of educators at all grade levels. We present these inquiry-oriented workshops to inservice educators to teach them about the most recent and relevant Sun-Earth Connection discoveries, missions, and research, which they will then be able to integrate into their classroom curriculum and instruction. Mission scientists participate in the workshops to share the most current science content. Education specialists provide age-appropriate lessons, as well as integrated hands-on activities to demonstrate science application in the classroom. Workshop participants become active teacher-learners and improve both their content knowledge and pedagogy in Sun-Earth Connection science.

Lead: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Contact: Dr. Greg Schultz, University of California, Berkeley, Berkeley, CA 94720. E-mail: schultz@ssl.berkeley.edu. Phone: 510-643-0012.

Primary URL: <http://sunearth.gsfc.nasa.gov>

2nd URL: <http://sunearth.ssl.berkeley.edu>

Scientist(s):	Ms. Joelle Clark	Northern Arizona University	Flagstaff, AZ
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD

Dr. Adrienne Cool	San Francisco State University	San Francisco, CA
Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
Mr. John Erickson	University of California, Berkeley	Berkeley, CA
Dr. Alan Gould	Lawrence Hall of Science	Berkeley, CA
Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
Ms. Barbara Lambert	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Carol Lunsford	University of California, Berkeley	Berkeley, CA
Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
Dr. Ellen Metzger	San Jose State University	San Jose, CA
Dr. Kathleen O'Sullivan	San Francisco State University	San Francisco, CA
Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
Ms. Darlene Park	University of California, Berkeley	Berkeley, CA
Mr. Donald Robinson-Boonstra	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Igor Ruderman	University of California, Berkeley	Berkeley, CA
Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
Dr. Richard Sedlock	San Jose State University	San Jose, CA
Dr. Timothy Slater	University of Arizona	Tucson, AZ
Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Oct 02	06 Oct 02	San Mateo County Office of Education	Redwood City, CA	29	0	0
07 Oct 02	06 Sep 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	800	0
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	16	0	0
02 Nov 02	09 Nov 02	San Jose State University	San Jose, CA	23	0	0
11 Nov 02	11 Nov 02	Anchorage School District	Anchorage, AK	45	255	0
24 Feb 03	24 Feb 03	Community Resources for Science	Oakland, CA	0	30	0
07 Mar 03	07 Mar 03	University of California, Berkeley	Berkeley, CA	30	0	0
22 Apr 03	23 Apr 03	University of Arizona	Tucson, AZ	28	0	0
15 May 03	15 May 03	Stanislaus County Office of Education	Modesto, CA	21	0	0
21 May 03	21 May 03	Parkmont Elementary School	Fremont, CA	16	0	0
27 May 03	14 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	140	0
25 Jul 03	25 Jul 03	University of California, Berkeley	Berkeley, CA	27	0	0
02 Aug 03	06 Aug 03	American Association of Physics Teachers	Madison, WI	50	0	0
06 Aug 03	06 Aug 03	Matrinsburg STARBASE	Martinsburg, WV	73	0	0

A207. Teacher Workshops on Planet Finding

Theme(s): ASO

Msn/Prgm: Kepler[B24], LWS[B114]

Description: Kepler E/PO conducts teacher workshops in the subject area of planet-finding. The workshops are designed to support national science education standards and provide teachers with highly usable activities in science education as well as topical information.

Lead: Mr. Alan Gould, Lawrence Hall of Science, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.

Contact: Ms. Edna DeVore, SETI Institute, Mountain View, CA 94043. E-mail: edevore@seti.org. Phone: 650-960-4538.

Primary URL: <http://www.lawrencehallofscience.org/kepler>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	16	0	0

A208. Teachers Experience Astrobiology: NASA Astrobiology Institute (NAI) Workshops and Short Courses

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: NAI offers teachers of all levels many opportunities to engage the science of astrobiology. These opportunities are offered at professional science education meetings such as the National Science Teacher's Association annual and regional meetings, the National Association of Biology Teachers' annual meeting, many state and regional conferences, and at our academic and research partner sites. Typical offerings include lectures and presentations by scientists combined with exposure to astrobiology classroom materials, including research into core astrobiology concepts whenever possible. Many of the workshops are collaborative efforts between NAI lead teams, other NASA missions, and the Origins Education Forum. NAI also supports a number of extended 1- to 2-week teacher institutes which focus on a specific topic or discipline. The institutes are based in research environments and are usually led by scientists. Astrobiology workshops are unique in that they provide interdisciplinary science topics with the focus on life in the Universe in a way that captures the imagination of students and addresses the trend in American middle and high schools towards integrated science courses.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Primary URL: <http://nai.arc.nasa.gov/teachers>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jul 02	01 Aug 02	Carnegie Institution of Washington	Washington, DC	60	0	0
01 Oct 02	30 Sep 03	NASA Johnson Space Center	Houston, TX	270	150	0
30 Oct 02	02 Nov 02	National Association of Biology Teachers Annual Convention	Cincinnati, OH	50	0	0
29 Nov 02	02 Dec 02	Marine Biological Laboratory	Woods Hole, MA	25	0	0
01 Dec 02	30 Jun 03	NASA Johnson Space Center	Houston, TX	100	0	0
05 Dec 02	07 Dec 02	National Science Teacher's Association Regional Conference	Albuquerque, NM	30	0	0
10 Jan 03	16 Jan 03	American Association of Physics Teachers	Austin, TX	0	20	0
11 Feb 03	13 Feb 03	NASA Astrobiology Institute General Meeting	Tempe, AZ	50	0	0
14 Mar 03	14 Mar 03	Southern Connecticut State University	New Haven, CT	20	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	70	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	50	0	0
12 Apr 03	13 Apr 03	Marine Biological Laboratory	Woods Hole, MA	25	0	0
18 May 03	22 May 03	American Society for Microbiology Teacher Science Day	College Park, MD	20	0	0
09 Jun 03	21 Jun 03	NASA Johnson Space Center	Houston, TX	4	0	0
23 Jun 03	27 Jun 03	Pennsylvania State University	University Park, PA	20	0	0
03 Jul 03	03 Jul 03	Marine Biological Laboratory	Woods Hole, MA	18	0	0
12 Jul 03	20 Jul 03	University of New Mexico	Albuquerque, NM	53	0	0
16 Jul 03	16 Jul 03	NASA Astrobiology Institute	Moffett Field, CA	25	0	0
10 Aug 03	16 Aug 03	Marine Biological Laboratory	Woods Hole, MA	40	0	0

A209. "Teachers Touch the Sky": Hands-on Workshop in Space Science

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: "Teachers Touch the Sky" is an annual 1-week teachers workshop at NASA's Jet Propulsion Laboratory (JPL). This inquiry-based, hands-on teacher training workshop walks teachers through activities including the Venus (Titan) topography box, measurement and math, craters, and the GEMS activities "Satellites of Jupiter", "Oobleck", "Magnifiers", and "Color Analyzers". All materials are provided, and teachers are made aware of further available NASA resources. A field trip to Table Mountain Observatory is part of the workshop. Many NASA products for the classroom (e.g. posters and CDs) are handed out. Each year, the workshop carries a different theme that ties into a current JPL mission, such as water on Mars, cratering processes, and life in the Universe. Daily guest lectures from JPL scientists cover topics in basic science and math, as well as results from ongoing missions. The workshop includes follow-up visits to the classroom. Improvements have been

made each year based on evaluations from the previous years. Approximately 75–85 percent of the 2,300 students served yearly are members of underrepresented minority groups.

Lead: Dr. Bonnie Buratti, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: bonnie.j.buratti@jpl.nasa.gov. Phone: 808-354-7427.

Scientist(s):	Dr. James Bauer	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Bonnie Buratti	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Hicks	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Damon Simonelli	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Paul Weissman	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Aug 03	06 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	15	0	0

A210. "The Cosmos is the Classroom"

Theme(s): ASO, SEU

Msn/Prgm: CXO[B65]

Description: In the first two activities of a three-part program being carried out under a Chandra Cycle-4 E/PO Grant, two teachers workshops were held over the summer focusing on science topics related to the Chandra mission and NASA space science in general. The first workshop paired scientists with educators to develop 17 lead-ers/presenters, as well as materials for the second workshop. The second workshop utilized the implementers trained in the first to work with 28 new participants, including 22 grade 10–12 and 5 middle school teachers, as well as 1 preservice teacher. A CD is being produced which will contain all of the activities, lectures and graphics presented during the workshop. The third part of the program will invoke the partnership with the Huntsville Housing Authority to identify 15 at risk, economically underprivileged students to mentor and encourage the development of math and science skills.

Lead: Ms. Mitzi Adams, NASA Marshall Space Flight Center, Marshall Space Flight Center, AL 35812. E-mail: mitzi.adams@nasa.gov. Phone: 256-961-7626.

Primary URL: <http://highenergyteaching.com>

2nd URL: <http://xanth.msfc.nasa.gov/solar>

Scientist(s):	Dr. Mitzi Adams	NASA Marshall Space Flight Center	Huntsville, AL
	Dr. Ronald Elsner	NASA Marshall Space Flight Center	Huntsville, AL
	Dr. Chryssa Kouveliotou	NASA Marshall Space Flight Center	Huntsville, AL
	Dr. Colleen Wilson-Hodges	NASA Marshall Space Flight Center	Huntsville, AL
	Dr. Peter Woods	Universities Space Research Association	Columbia, MD
Partner(s):	Huntsville Housing Authority		Huntsville, AL

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 Jun 03	03 Jun 03	National Space Science and Technology Center	Huntsville, AL	15	0	0
20 Jul 03	23 Jul 03	National Space Science and Technology Center	Huntsville, AL	28	0	0

A211. "The Great Desert": Geology and Life on Mars and in the Southwest

Theme(s): SSE

Msn/Prgm: SRT[B3], LPI[B61]

Description: "The Great Desert" training workshop for grade 6–12 science teachers focused on the geology and biology of Mars through analogies on Earth. Field studies included the Grand Canyon, the Meteor Crater, Sunset Crater Volcano, the Jemez Caldera Volcano and its hot springs and faults of the Rio Grande Rift. At the University of New Mexico (Albuquerque), classroom learning complemented the field studies and included up-to-the-minute results from spacecraft exploration of Mars. Tested classroom activities that illustrated the field studies will be shared with students, schools, and districts. The field and classroom work was augmented by extensive background materials, activity plans, and references.

Lead: Dr. Allan Treiman, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: treiman@lpi.usra.edu. Phone: 281-486-2117.

Primary URL: <http://www.lpi.usra.edu/science/treiman/greatdesert>

Scientist(s):	Dr. Allan Treiman	Lunar and Planetary Institute	Houston, TX
Partner(s):	NASA Ames Research Center		Moffett Field, CA

A212. THEMIS: Teacher Professional Development

Theme(s): SEC

Msn/Prgm: THEMIS[B105]

Description: THEMIS science is shared with teachers at conferences.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu.
Phone: 510-643-7273.Contact: Dr. Laura Peticolas, University of California, Berkeley, Berkeley, CA 94720. E-mail: laura@ssl.berkeley.edu.
Phone: 510-643-7273.Scientist(s): Dr. Nahide Craig University of California, Berkeley Berkeley, CA
Dr. Michelle Larson University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 Aug 03	06 Aug 03	American Association of Physics Teachers	Madison, WI	40	0	0

A213. "Touch the Sun": Teacher Workshop

Theme(s): SEC

Msn/Prgm: Solar-B[B95]

Description: "Touch the Sun" explores an experiment-based curriculum designed to excite student interest in science with hands-on activities in designing, building, and collecting/analyzing data with six different Sun- and light-observing instruments. The activities emphasize the impact of design and material choices on the accuracy and repeatability of measurements. A "lessons-learned" approach is used to improve instrument design and/or measurement technique. The activities culminate in meaningful and interesting scientific results from the students' direct measurements of the Sun and light. The six observational activities include usage of: (1) a sundial for tracking the Sun's motion, determining the time of true local noon, and pinpointing the observer's geographic location; (2) a pinhole camera for measuring the physical diameter of the Sun (given the distance from the Earth to the Sun); (3) an activity for tracking the motion of sunspots and determining their physical speed and the Sun's rate of rotation; (4) a spectroscope for recording and comparing spectra of different light sources; (5) a polarimeter for detecting and making quantitative measurements of polarization of light from different sources; and (6) a color filter and bandpass activity for characterizing color filters and constructing a custom filter with the desired bandpass characteristics. A seventh activity was developed around the theme of satellite/spacecraft engineering, using the Solar-B spacecraft mission as an example. This activity, the "Shoebat Satellite," provides students with the challenge of designing and constructing a structure that will: (1) protect a cube of ice from melting under the hot Sun (thermal engineering) and (2) protect an egg from damage when dropped from a height of at least 25 feet over a hard surface (mechanical engineering). The workshop activities are aligned with national and California state science and mathematics content standards.

Lead: Mr. Benjamin Burrell, Chabot Space and Science Center, Oakland, CA 94619. E-mail: bburrell@chabot-space.org. Phone: 510-336-7308.Primary URL: <http://www.chabot-space.org/vsc/exhibits/solarb/default.asp>Scientist(s): Dr. Gibor Basri University of California, Berkeley Berkeley, CA
Dr. Bart DePontieu Lockheed Martin Solar and Astrophysics Lab Palo Alto, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Jul 03	18 Jul 03	Chabot Space and Science Center	Oakland, CA	4	0	0

A214. Towards Other Planetary Systems (TOPS) Astronomy Workshop

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21], Deep Impact[B51]

Description: TOPS is a workshop on the technologies used in astronomical research that is tailored to local needs and settings. A 3-week intensive version was given to a group of Hawaii K-12 teachers to prepare them to use remote telescope observing projects to teach science and mathematics. The teachers received instruction in astrometry and photometry of CCD images using image processing software, after which they wrote research papers on subjects such as Kuiper Belt Objects, extrasolar planets, and variable stars. The teachers also

received training in operating portable STARLAB planetariums and learned how to train other teachers in all these methods. A follow-up 1-day workshop conducted by these teachers for teachers on Maui included training in spectroscopy, gravity and orbits, and the expanding universe, as well as lectures by astronomers from NASA's Deep Impact mission. A 3-day workshop was also given to K-12 teachers from the islands of Rota, Pohnpei, Losrae, and Yap of the Federated States of Micronesia and the Marshall Islands. A 1-day public version of the TOPS workshop was given to middle and high school students and their parents at the Punahou School in Honolulu, Hawaii during the annual Lacy Veach Astronaut Day of space science events for the public. That workshop included an impact cratering activity, paper-folding flying origami and stars, and an astrobiology hands-on experiment taught by a teacher who had graduated from the TOPS program

Lead: Ms. Mary Kadooka, Hawaii Space Grant Consortium, Honolulu, HI 96822. E-mail: kadooka@ifa.hawaii.edu. Phone: 808-956-7954.

Primary URL: <http://www.ifa.hawaii.edu/tops/tops.htm>

2nd URL: <http://www.ifa.hawaii.edu>

Scientist(s): Dr. Karen Meech University of Hawaii at Manoa

Partner(s): American Association of Variable Star Observers

Bishop Museum

Department of Health, Education, and Social Services

Hawaii NASA Regional Educator Resource Center

Ministry of Education

NASA Infrared Telescope Facility

University of Hawaii at Manoa

Honolulu, HI

Cambridge, MA

Honolulu, HI

Palikir, Federated

States of Micronesia

Kapolei, HI

Majuro, Marshall Islands

Honolulu, HI

Honolulu, HI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Jun 03	27 Jun 03	University of Hawaii at Manoa	Honolulu, HI	16	0	0
28 Jun 03	28 Jun 03	Wailea Marriott Resort	Wailea, HI	27	0	0
26 Jul 03	29 Jul 03	The Village Hotel	Pohnpei, Federated States of Micronesia	29	0	0
09 Nov 03	09 Nov 03	Punahou School	Honolulu, HI	27	0	0

A215. Towards Other Planetary Systems (TOPS): Astronomy Workshop for Marshall Islands and Micronesia Teachers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: TOPS, a 3-day workshop in astronomy technology, was presented on the island of Pohnpei for K-12 teachers from the islands of Rota, Pohnpei, Kosrae and Yap of the Federated States of Micronesia and the Marshall Islands. The goal of the workshop was to train teachers to use and incorporate the telescopes that were given to them into their math and science curriculums. A wealth of NASA space science education materials were reviewed and given to them by the Hawaii NASA Regional Educator Resource Center. The instructor was Karen Meech, a NASA Deep Impact scientist and faculty member at the University of Hawaii at Manoa Institute for Geophysics and Planetology. The coordination of the event was done by Mary Kadooka of the Hawaii NASA Space Science Network Northwest.

Lead: Dr. Karen Meech, University of Hawaii at Manoa, Honolulu, HI 96822. E-mail: meech@ifa.hawaii.edu. Phone: 808-956-6828.

Primary URL: <http://www.spacegrant.hawaii.edu/S2N2info.html>

2nd URL: <http://www.k12.hi.us/~space/nasasite.html>

Partner(s): Department of Health, Education, and Social Services

Hawaii NASA Regional Educator Resource Center

Ministry of Education

Pacific Resources for Education and Learning

Palikir, Federated

States of Micronesia

Kapolei, HI

Majuro, Marshall Islands

Honolulu, HI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB27

A216. Utah State University: Space Science for Student Teachers and Outreach

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: The Get-Away-Special (GAS) team experienced a setback following the Columbia Space Shuttle disaster. One of our outreach schools, the Shoshone-Bannock Native American Middle-High School, had an experiment onboard the Columbia. Since then, however, our team has been rejuvenated with a project called ISO-CRATE. The team is building a container, along with electronics and a data collection system, that will carry K-12 and undergraduate experiments into space for up to 6-month stays on the ISS. This project is being carried out in conjunction with the recently created Inland Northwest Space Alliance. The Utah State University (USU) student team has spent the last 5 months designing and testing ISO-CRATE. The team has been exposed to NASA design review procedures and safety-reliability issues that are required for all NASA experimenters. The second major thrust of this outreach is exploring methods of getting space science into the K-12 teaching curriculum in accord with national and state curriculum requirements. Our approach has been to work with pre-service teachers. The project has been led by Arlynda Jorgensen, who has just graduated as a science teacher from Utah State University and who has a strong space science background. She was the GAS payload manager for G221 flown in December, 2001. Over the past 8 months, Arlynda has been carrying out the following tasks: (1) developing specific space science packages that are self-contained and directly address curriculum specifications; (2) developing a "matrix" that enables a quantification of how well NASA Web products meet teachers' needs, both practically and from a curriculum point of view; and (3) searching NASA Web sites for material that, in principle, has been designed for teachers and then evaluating them. This has led to rather negative assessments for most Web products that she tested. In fact, in most cases, the products are oversold in that they contain excellent science but require a very knowledgeable teacher to repackage the material into class material that meets curriculum objectives. This material is being prepared in the form of a formal report that will be distributed to other team members, the secondary education department at USU, the NASA Resource Center at USU, and the Rocky Mountain NASA Space Grant Consortium. After review, this report will be made available and distributed.

Lead: Dr. Robert Schunk, Utah State University, Logan, UT 84322-4405. E-mail: schunk@cc.usu.edu. Phone: 435-797-2978.

Contact: Ms. Shawna Johnson, Utah State University, Logan, UT 84322-4405. E-mail: shawna@cc.usu.edu. Phone: 435-797-2962.

Scientist(s):	Dr. Robert Schunk	Utah State University	Logan, UT
	Dr. Jan Sojka	Utah State University	Logan, UT
Partner(s):	NASA Office of Education		Washington, DC
	Rocky Mountain Space Grant Consortium		Salt Lake City, UT

A217. "What is Your Cosmic Connection to the Elements?": Educator Workshop

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: "Cosmic Elements" presentation with "What's Out There?", "Nickelodeon", "Cosmic Elements Board Game", and/or "Kinesthetic Big Bang" activities.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Primary URL: <http://imagine.gsfc.nasa.gov/docs/teachers/elements>

Scientist(s):	Ms. Amanda Cook	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Rosemary Millham	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Sara Mitchell	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Suzanne Pleau-Kinnison	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	20	0	0
15 Apr 03	16 Apr 03	National Organization of Black Chemists and Chemical Engineers Annual Conference				

23 Jun 03	23 Jun 03	NASA Goddard Space Flight Center	Indianapolis, IN	8	0	0
29 Jul 03	29 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	51	0	0
05 Aug 03	05 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	25	0	0
			Greenbelt, MD	20	0	0

A218. XMM-Newton High-Energy Classroom Teacher Workshops

Theme(s): SEU
Msn/Prgm: GLAST[B68], Swift Gamma Ray Burst Mission[B78], XMM-Newton[B86]
Description: XMM-Newton teacher workshops during 2003 were conducted by Educator Ambassadors trained at Sonoma State University.
Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynn@charmian.sonoma.edu. Phone: 707-664-2655.
Contact: Dr. Phil Plait, Sonoma State University, Rohnert Park, CA 94928. E-mail: phil@universe.sonoma.edu. Phone: 707-664-2190.
Primary URL: <http://xmm.sonoma.edu>
2nd URL: http://heasarc.gsfc.nasa.gov/docs/xmm_lc
Scientist(s): Mr. Tom Estill Chabot Space and Science Center Oakland, CA
Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Oct 02	21 Oct 02	Fresno State University	Fresno, CA	25	0	0
14 Feb 03	14 Feb 03	Killarney Secondary School	Vancouver, Canada	78	0	0

Curriculum Development/Dissemination

A219. "A Tale of Two Deserts": Training Educators to Understand Water-Formed Features in the Desert Southwest and on Mars Using Image-Based Exercises

Theme(s): SSE
Msn/Prgm: SRT[B3]
Description: "A Tale of Two Deserts" is a set of standards-based comparison exercises that provides images of Earth-based desert landforms and analog sites on Mars, in a clickable browser-based format, for high school educators to use in their Earth and space science curricula. These exercises, tied directly (and graphically) to national and Arizona science education standards, provide the opportunity for the users to explore landforms, climate, and geologic processes in the desert southwest and the stability and phases of water under different environmental conditions. Users can also evaluate high resolution images of the surface of Mars, at which desert landform analogs exist, and climatic conditions at each site for comparison with the stability field of liquid water. A hands-on model exercise is included wherein students build a layered mesa with cemented colored sand and then proceed to use water, wind, and weak acid solution (vinegar) to erode the model. Realistic analog landforms are produced by this model and the landforms and relative rates and characteristics of the erosion are evaluated by the users.
Lead: Dr. Ronald Greeley, Arizona State University, Tempe, AZ 85287. E-mail: greeley@asu.edu. Phone: 480-965-7045.
Contact: Mr. Steven Kadel, Glendale Community College, Glendale, AZ 85302. E-mail: s.kadel@gcmail.maricopa.edu. Phone: 623-845-3618.
Primary URL: <http://europa.la.asu.edu>
2nd URL: <http://europa.la.asu.edu/epo>
Scientist(s): Dr. Jack Farmer Arizona State University Tempe, AZ
Dr. Ronald Greeley Arizona State University Tempe, AZ
Mr. Steven Kadel Glendale Community College Glendale, AZ
Dr. Horton Newsom University of New Mexico Albuquerque, NM
Ms. Leslee Unser Arizona State University Tempe, AZ

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Nov 02	08 Nov 02	Arizona State University	Tempe, AZ	10	0	0
22 Nov 02	22 Nov 02	Arizona State University	Tempe, AZ	31	0	0
17 Jul 03	19 Jul 03	University of New Mexico	Albuquerque, NM	43	0	0

A220. Astrobiology Micro*scope Web Site

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The Micro*scope Web site, developed through the Astrobiology Institute at the Marine Biological Laboratory at Woods Hole (MBL), is an innovative biodiversity, bioinformatics Web site that greatly improves access to information about microbes. Microbes were the only organic life during most of the history of the Earth. Over 3.5 billion years ago they began the process of transforming this planet, making it habitable for those of us who came later. Bacteria and protists remain the dominant players in most known ecosystems. The numbers of bacteria and protists in the world is staggering—a single teaspoon of sea water contains millions of bacteria and thousands of protists. The study of microbial communities is essential if we are to understand and manage the world around us, and such studies prepare us for the exploration for life on other planets. Micro*scope provides teachers and students with high-quality, downloadable, digital light micrographs of microbes. Presently, the site contains software to manage names and classification; a classification of protists and bacteria; dynamic outlinks for internet searching; original data about microbes; a comprehensive classification of all protist genera and prokaryotes, including 4,500 images of microbes with explanatory text; and a variety of educational resources, including Lucid taxonomic guides. Information in the site can be accessed by habitat, cell shape, alphabetic list of genus name, and formal classification. The site is continuing to expand and improve for larger public promotion by ensuring that all aspects work properly. New educational materials, including hands-on classroom activities already developed by NAI at MBL, glossary terms, and a tutorial for using Lucid guides are under development in addition to a database of available K–12 hands-on activities in microbiology that detail which aspects of the National Science Education Standards are met by each activity.

Contact: Dr. Lorraine Olendzenski, Marine Biological Laboratory, Woods Hole, MA 02543. E-mail: lolendzenski@mbi.edu.Primary URL: <http://www.mbl.edu/microscope>**A221. Astromaterials Sample Distribution**

Theme(s): ASO, SSE

Msn/Prgm: Astromaterials Program[B57]

Description: The Astromaterials Curation Office has supported education for over 25 years by loaning samples of Moon rocks and meteorites for precollege and university classroom use. The Lunar and Meteorite Sample Disk Program is a collaboration between the Curation Office and the NASA Office of Education. The program loans Lucite disks, each containing six extraterrestrial rock or soil samples, to precollege teachers. After attending a certification and training workshop by NASA educators, teachers receive NASA's lunar and meteorite teacher guides and are authorized to borrow the sample disks. The curator also loans Lunar and Meteorite Educational Thin Sections to colleges for use in geology classes. The curator has also developed lunar and Mars soil simulants for engineering use. Small bags of the Mars simulant are available to educators.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, Houston, TX 77058. E-mail: marilyn.lindstrom-1@nasa.gov. Phone: 281-483-5135.Contact: Mr. Larry Bilbrough, NASA Office of Education, Washington, DC 20546. E-mail: lbilbrou@hq.nasa.gov. Phone: 202-358-3048.Primary URL: <http://curator.jsc.nasa.gov/lunar/samreq/samreq.htm>2nd URL: <http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA Johnson Space Center	Houston, TX	0	0	0

A222. "Build Your Own Planet": Development of Origins-Based, Grade-6 Science Units

Theme(s): ASO

Msn/Prgm: SRT[B3]

Description: The goal of this project is to design an astronomical origins-based curriculum suitable for upper-elementary and middle schools that aligns with national and Indiana standards and benchmarks and is easy for teachers to adopt. Units in this curriculum will be interdisciplinary and incorporate hands-on, interactive, and group project elements. Units are being developed through a collaboration between a NASA-funded Indiana University astronomy professor and a science education doctoral student (Mr. Glenn Simonelli), are being field-

tested in local elementary schools, and are undergoing assessment directed by Dr. William Boone, a School of Education Professor. The curriculum will be disseminated through publications, presentations at meetings of science teachers, and the doctoral student's instruction of preservice teachers.

Lead: Dr. Richard Durisen, Indiana University, Bloomington, IN 47401. E-mail: durisen@astro.indiana.edu. Phone: 812-855-6921.

Scientist(s): Dr. Richard Durisen Indiana University, Bloomington Bloomington, IN
 Partner(s): Lakeview Elementary School Bloomington, IN
 University Elementary School Bloomington, IN

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Nov 02	30 Sep 03	Indiana University, Bloomington	Bloomington, IN	2	0	0
13 Jan 03	13 Jan 03	Indiana University, Bloomington	Bloomington, IN	227	0	0
03 Feb 03	03 Mar 03	University Elementary School	Bloomington, IN	34	0	0
19 Feb 03	21 Feb 03	Hoosier Association of Science Teachers Convention	Indianapolis, IN	0	1,540	0
25 Mar 03	25 May 03	Lakeview Elementary School	Bloomington, IN	34	45	0
01 Jun 03	30 Sep 03	Indiana University, Bloomington	Bloomington, IN	6	0	0

A223. Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Curriculum Dissemination

Theme(s): SEC, SEU

Msn/Prgm: CHIPS[B72], RHESSI[B102]

Description: CHIPS education and public outreach (E/PO) personnel participate in events that allow for the dissemination of curriculum materials developed and produced by the CHIPS mission.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: http://cse.ssl.berkeley.edu/chips_epo

Scientist(s): Dr. Nahide Craig University of California, Berkeley Berkeley, CA
 Dr. Bryan Mendez University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	100	100	0

A224. Cosmology as a Thematic Approach to High School Physics

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: The University of California, Santa Barbara Remote Access Astronomy Project (RAAP) is developing curriculum activities for advanced high school students that demonstrate the design and application of polarization sensitive detectors in Cosmic Microwave Background (CMB) research. The general goal of RAAP is to inspire students to participate in science through the study of astronomy and to assist them in becoming more scientifically and technically literate, thus improving their prospects for a productive and enjoyable career in science or technology. The goal of this effort is to encourage more high school seniors to enroll in physics by presenting standards-based content through the themes of modern physics, cosmology, and astrophysics. Illustrations of these themes include the role of detectors in the study of the CMB, the physical principles used in detector design, the form of data produced and methods of analyzing and interpreting the data. The objectives of this effort are to have available on the RAAP web site: (1) a glossary of terms necessary to understand the design and use of detectors in CMB research; (2) a series of hands-on, investigative lessons for advanced high school students demonstrating concepts used in the design and implementation of CMB polarization detectors, the form of data expected from CMB polarization observations, and how that data is analyzed and interpreted; (3) background information for teachers, so they can effectively present the above lessons; and (4) formative and summative evaluation questionnaires for teachers to give their students. The second main objective is to have a few specific, local teachers of underserved and/or underutilized students use and evaluate the above materials.

Lead: Dr. Andrew Cleland, University of California, Santa Barbara, Santa Barbara, CA 93106. E-mail: cleland@physics.ucsb.edu. Phone: 805-893-5401.

Contact: Mr. Thomas Fuller, University of California, Santa Barbara, Santa Barbara, CA 93106. E-mail: fuller@physics.ucsb.edu. Phone: 805-893-7240.

Primary URL: <http://www.deepspace.ucsb.edu>

Scientist(s): Dr. Andrew Cleland University of California, Santa Barbara

Santa Barbara, CA

Partner(s): Lompoc High School

Lompoc, CA

A225. Education Standards Matrix (Quilt) Outreach

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12]

Description: The standards "Quilt" is a matrix that allows educators to search for NASA curricular products by the national content and thematic standards with which they align. The Quilt is available online, on CD-ROM, and in hard copy. Hundreds of educators have also been involved in various evaluations of the math and science standards Quilts.

Lead: Mr. Art Hammon, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Virgil.A.Hammon@jpl.nasa.gov. Phone: 818-393-4702.

Primary URL: <http://www.quilt.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Oct 02	21 Oct 02	Georgia Council of Teachers of Mathematics Conference	Eatonton, GA	80	1,500	0
09 Apr 03	12 Apr 03	National Council of Teachers of Mathematics National Conference	San Antonio, TX	80	0	0
17 Jun 03	18 Jun 03	California State University, Long Beach	Long Beach, CA	30	0	0
10 Jul 03	13 Jul 03	Texas Council of Teachers of Mathematics Annual Conference	Houston, TX	200	0	0

A226. "Fingerprints of Life?": Development of Classroom Activities, Web Site, and CD-ROM

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: "Fingerprints of Life?", a NASA education Web site run by the Johnson Space Center, is the product of a partnership between educators and scientists from Johnson's Institute for the Study of Biomarkers in Astromaterials. The classroom activities reflect the biomarker research that is being conducted in our laboratories. The Web site includes classroom activities, inquiry-style standards-based lessons, annotated PowerPoint presentations with many images, links to national mathematics and science standards, and a comprehensive resource guide. Over the 2002-2003 school year, the classroom activities have been tested and are currently in review.

Contact: Ms. Jaclyn Allen, Lockheed Martin Corporation, Houston, TX 77058. E-mail: jaclyn.s.allen1@jsc.nasa.gov. Phone: 281-483-7389.

Primary URL: <http://ares.jsc.nasa.gov/Education/Websites/AstrobiologyEducation>

A227. HST Cycle Education/Public Outreach Grant: Value-Added Educational Tutorials for HST Data

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: A pilot series of on-line science education tutorials and exercises for K-12 students related to NASA OSS science themes will demonstrate the connections between new HST observations and existing astronomical data that students can easily access. Some of the exercises will specifically focus on the subject of the parent HST science research program that studies colliding and merging galaxies within the context of an evolving universe. The connections between new data and previously catalogued astronomical data will show students how new scientific results can be derived and how new research programs can be created for future missions of astronomical discovery. The methods and tools of the scientist, particularly the math tools, will be demonstrated and employed as part of the exercises. Scientific rationale for the research projects will be included in the lesson plans for use at the high school level. The team of scientists and local teachers, regional science education coordinators, NASA education offices, and the OSS Education Support Network will collaborate in the development and dissemination of the project results. The online educational resources will be made uni-

Lead: versally available via the Internet.
 Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu.
 Phone: 410-338-4798.
 Primary URL: <http://nvo.gsfc.nasa.gov/astrodata>
 Partner(s): NASA Goddard Space Flight Center Greenbelt, MD

A228. HST: Workshops and Presentations

Theme(s): ASO
 Msn/Prgm: HST[B22]
 Description: The Space Telescope Science Institute offers workshops and presentations to a variety of national and state K-14 audiences who are using HST educational products and materials.
 Lead: Ms. Bonnie Eisenhamer, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: bonnie@stsci.edu.
 Phone: 410-338-4798.

Scientist(s):	Mr. Mark Abernathy	Space Telescope Science Institute	Baltimore, MD
	Ms. Faith Abney	Space Telescope Science Institute	Baltimore, MD
	Mr. Dave Adler	Space Telescope Science Institute	Baltimore, MD
	Ms. Lucy Albert	Space Telescope Science Institute	Baltimore, MD
	Ms. Lynn Barranger	Space Telescope Science Institute	Baltimore, MD
	Ms. Alice Berman	Johns Hopkins University	Baltimore, MD
	Mr. Brett Blacker	Space Telescope Science Institute	Baltimore, MD
	Mr. Kirk Borne	Space Telescope Science Institute	Baltimore, MD
	Mr. Bob Boyer	Space Telescope Science Institute	Baltimore, MD
	Ms. Heather Bradbury	Space Telescope Science Institute	Baltimore, MD
	Ms. Molly Brandt	Space Telescope Science Institute	Baltimore, MD
	Ms. Laura Bucklew	Space Telescope Science Institute	Baltimore, MD
	Mr. Mark Calvin	Space Telescope Science Institute	Baltimore, MD
	Mr. Kevin Caruso	StanKraft, Inc.	Skokie, IL
	Mr. Bobby Edwards	Space Telescope Science Institute	Baltimore, MD
	Ms. Bonnie Eisenhamer	Space Telescope Science Institute	Baltimore, MD
	Mr. Shar Etemad	Swales Aerospace	Beltsville, MD
	Ms. Lisa Frattare	Space Telescope Science Institute	Baltimore, MD
	Ms. Darlene Gadd	NASA Astrobiology Institute	Moffett Field, CA
	Dr. Ian Griffin	Space Telescope Science Institute	Baltimore, MD
	Mr. Jeff Grills	Earth and Space Science Labs	Frederick, MD
	Ms. Quin Gryce	Space Telescope Science Institute	Baltimore, MD
	Mr. Forrest Hamilton	Space Telescope Science Institute	Baltimore, MD
	Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. William Hathaway	Space Telescope Science Institute	Baltimore, MD
	Ms. Christine Heller-Boyer	Space Telescope Science Institute	Baltimore, MD
	Ms. Inge Heyer	Space Telescope Science Institute	Baltimore, MD
	Dr. Sherie Holfeltz	Space Telescope Science Institute	Baltimore, MD
	Dr. Ann Hornschemeir	Johns Hopkins University	Baltimore, MD
	Mr. Mark Kochte	Space Telescope Science Institute	Baltimore, MD
	Dr. Mario Livio	Space Telescope Science Institute	Baltimore, MD
	Mr. Juan Madrid	Space Telescope Science Institute	Baltimore, MD
	Mr. Dan McCallister	Space Telescope Science Institute	Baltimore, MD
	Dr. Melissa McGrath	Space Telescope Science Institute	Baltimore, MD
	Dr. Flavio Mendez	Maryland Science Center	Baltimore, MD
	Mr. Max Mutchler	Space Telescope Science Institute	Baltimore, MD
	Mr. Weldon Newton	Space Telescope Science Institute	Baltimore, MD
	Mr. Jacob Noel-Storr	Columbia University	New York, NY
	Ms. Carole Rest	Space Telescope Science Institute	Baltimore, MD
	Mr. Anthony Rogers	Space Telescope Science Institute	Baltimore, MD
	Ms. Tricia Royle	Space Telescope Science Institute	Baltimore, MD
	Dr. Al Schultz	Space Telescope Science Institute	Baltimore, MD
	Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
	Mr. Scott Stallcup	Space Telescope Science Institute	Baltimore, MD

Mr. John Stoke	Space Telescope Science Institute	Baltimore, MD
Dr. Jim Stryder	Western Colorado Museum	Grand Junction, CO
Dr. Frank Summers	Space Telescope Science Institute	Baltimore, MD
Mr. Ray Villard	Space Telescope Science Institute	Baltimore, MD
Ms. Donna Weaver	Space Telescope Science Institute	Baltimore, MD
Mr. Rusty Whitman	Space Telescope Science Institute	Baltimore, MD
Mr. Hugh Wilson	Space Telescope Science Institute	Baltimore, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	10 Nov 02	Jack Hayes Elementary School	Monroe, LA	100	0	0
05 Oct 02	05 Oct 02	Fort Wainwright Army Base	Fort Wainwright, AK	0	3	0
10 Oct 02	10 Oct 02	Centennial Lane Elementary School	Ellicott City, MD	100	0	0
10 Oct 02	23 Nov 02	Space Telescope Science Institute	Baltimore, MD	4	0	0
16 Oct 02	16 Oct 02	S'Cool	Hamden, VA	0	100	0
16 Oct 02	16 Oct 02	Winneconne Elementary School	Winneconne, WI	121	0	0
16 Oct 02	16 Oct 02	Winneconne Middle School	Winneconne, WI	403	0	0
17 Oct 02	17 Oct 02	Dayton Public Schools	Dayton, OH	0	20	0
17 Oct 02	17 Oct 02	Rutgers University	Piscataway, NJ	1	0	0
18 Oct 02	18 Oct 02	McDonogh Elementary School	Owings Mills, MD	0	20	0
18 Oct 02	18 Oct 02	The Wistar Institute	Philadelphia, PA	0	200	0
18 Oct 02	18 Oct 02	University of Pittsburgh	Pittsburgh, PA	17	0	0
19 Oct 02	19 Oct 02	Grovemont Community Association	Ellicott City, MD	0	200	0
21 Oct 02	21 Oct 02	Elk City Public Schools	Elk City, ID	0	15	0
22 Oct 02	22 Oct 02	McDonogh Elementary School	Owings Mills, MD	0	40	0
23 Oct 02	23 Oct 02	Winneconne High School	Winneconne, WI	48	0	0
24 Oct 02	24 Oct 02	Carvers Bay Middle School	Hemingway, SC	41	0	0
29 Oct 02	29 Oct 02	Girl Scouts	Cambridge, VT	0	4	0
30 Oct 02	30 Oct 02	Ticasuk Brown Elementary School	North Pole, AK	0	20	0
01 Nov 02	01 Nov 02	North Jersey Astronomical Group	Clifton, NJ	0	100	0
05 Nov 02	05 Nov 02	Oakwood High School	Tinton Falls, NJ	51	0	0
06 Nov 02	06 Nov 02	Reno High School	Reno, NV	0	30	0
06 Nov 02	06 Nov 02	Western Colorado Math and Science Center	Grand Junction, CO	0	175	0
12 Nov 02	12 Nov 02	Amateur Astronomers Inc. of New Jersey	Cranford, NJ	0	100	0
12 Nov 02	12 Nov 02	Bushy Park Elementary School	Glenwood, MD	100	0	0
13 Nov 02	13 Nov 02	Franklin Middle School	Reisterstown, MD	15	0	0
14 Nov 02	14 Nov 02	Alexandria Country Day School	Alexandria, VA	80	0	0
15 Nov 02	15 Nov 02	Amateur Astronomers Association of Pittsburgh	Glenshaw, PA	0	100	0
16 Nov 02	16 Nov 02	Smithsonian Institution	Washington, DC	0	200	0
19 Nov 02	19 Nov 02	Coast to Coast AM	Palm Coast, FL	0	0	0
19 Nov 02	19 Nov 02	Denver Museum of Nature and Science	Denver, CO	0	300	0
19 Nov 02	19 Nov 02	Montessori School	Baltimore, MD	0	15	0
20 Nov 02	20 Nov 02	Girl Scouts	Baltimore, MD	0	20	0
22 Nov 02	22 Nov 02	Columbia University	New York, NY	0	50	0
25 Nov 02	25 Nov 02	John Paul Regional School	Windsor Mill, MD	28	0	0
25 Nov 02	25 Nov 02	WYPR Radio, 88.1 FM/Baltimore	Baltimore, MD	0	100,000	0
26 Nov 02	26 Nov 02	KVON Radio, 1440 AM/Napa Valley	Napa Valley, CA	0	10,000	0
30 Nov 02	30 Nov 02	The Baltimore Sun	Baltimore, MD	0	300,000	0
02 Dec 02	02 Dec 02	Federal Hill Elementary School	Baltimore, MD	32	0	0
03 Dec 02	03 Dec 02	Elkridge Elementary School	Elkridge, MD	0	60	0
06 Dec 02	06 Dec 02	Adler Planetarium and Astronomy Museum	Chicago, IL	0	50	0
10 Dec 02	10 Dec 02	Tularosa Elementary School	Tularosa, NM	0	30	0
12 Dec 02	12 Dec 02	Juan de Anza School	Hawthorne, CA	0	10	0
13 Dec 02	13 Dec 02	S'Cool	Hamden, VA	0	100	0
15 Dec 02	15 Dec 02	PhilCon Science Fiction Convention	Philadelphia, PA	0	500	0
06 Jan 03	10 Jun 03	Mad Science of South Orange County	Laguna Hills, CA	0	200	0
10 Jan 03	25 Feb 03	Western Colorado Math and Science Center	Grand Junction, CO	0	30	0

10 Jan 03	10 Jun 03	Arizona State University	Tempe, AZ	0	200	0
13 Jan 03	13 Jan 03	Astronomical Society of Harrisburg	Harrisburg, PA	0	30	0
14 Jan 03	14 Jan 03	Cape St. Claire Elementary School	Annapolis, MD	0	70	0
14 Jan 03	14 Jan 03	Idaho State University	Pocatello, ID	25	0	0
14 Jan 03	14 Jan 03	The Center Club	Baltimore, MD	0	30	0
15 Jan 03	15 Jan 03	Baltimore Museum of Industry	Baltimore, MD	0	100	0
18 Jan 03	18 Jan 03	Harford County Astronomical Society	Bel Air, MD	0	25	0
21 Jan 03	21 Jan 03	Grace United Methodist Church	Baltimore, MD	0	12	0
21 Jan 03	21 Jan 03	Perry Hall Elementary School	Baltimore, MD	35	0	0
23 Jan 03	23 Jan 03	Cornell University	Ithaca, NY	0	100	0
23 Jan 03	23 Jan 03	Valencia Middle School	Tucson, AZ	10	0	0
30 Jan 03	30 Jan 03	Brooks Crossing Elementary School	Monmouth Junction, NJ	25	0	0
30 Jan 03	30 Jan 03	Clifton Elementary School Two	Clifton, NJ	80	0	0
01 Feb 03	01 Feb 03	Boy Scout Troop	Clarksburg, WV	0	200	0
03 Feb 03	03 Feb 03	American Museum of Natural History	New York, NY	0	250	0
03 Feb 03	03 Feb 03	WNYC Public Radio/TV Stations	New York, NY	0	100,000	0
05 Feb 03	05 Feb 03	JFK Intermediate School	Deer Park, NY	36	0	0
05 Feb 03	05 Feb 03	Juan de Anza School	Hawthorne, CA	0	33	0
05 Feb 03	05 Feb 03	Notre Dame University	South Bend, IN	0	200	0
05 Feb 03	05 Feb 03	Samuel Shull Middle School	Perth Amboy, NJ	50	0	0
05 Feb 03	05 Feb 03	Will and Grundy/Kendall Counties Schools	Joliet, IL	0	50	0
07 Feb 03	07 Feb 03	StanKraft, Inc.	Skokie, IL	0	45	0
07 Feb 03	07 Feb 03	Virginia Space Grant Consortium	Hampton, VA	0	80	0
10 Feb 03	10 Feb 03	Liberty Independent School District	Liberty, TX	0	5	0
11 Feb 03	11 Feb 03	St. Mary's College	St. Mary's City, MD	0	150	0
12 Feb 03	12 Feb 03	Freestate Montessori School	Hydes, MD	0	10	0
12 Feb 03	12 Feb 03	Westchester Elementary School	Catonsville, MD	56	0	0
13 Feb 03	13 Feb 03	Maryland Institute College of Art	Baltimore, MD	0	100	0
14 Feb 03	14 Feb 03	Loudoun County Public Schools	Leesburg, VA	30	0	0
14 Feb 03	14 Feb 03	StanKraft, Inc.	Skokie, IL	0	20	0
14 Feb 03	16 Feb 03	Farpoint Science Fiction Convention	Elkridge, MD	0	600	0
16 Feb 03	16 Feb 03	NASA Johnson Space Center	Houston, TX	1,000	0	0
20 Feb 03	20 Feb 03	National Public Radio Network	Washington, DC	0	1,000,000	0
22 Feb 03	22 Feb 03	Midland Center for the Arts	Midland, MI	0	200	0
26 Feb 03	26 Feb 03	Bryn Mawr School	Baltimore, MD	310	0	0
26 Feb 03	26 Feb 03	Riverside Unified School District	Riverside, CA	0	100	0
27 Feb 03	27 Feb 03	Council Public Library	Council, ID	0	0	0
27 Feb 03	27 Feb 03	Treasure Coast Astronomical Society	Port St. Lucie, FL	0	350	0
03 Mar 03	03 Mar 03	Cobleskill School District	Cobleskill, NY	0	50	0
05 Mar 03	05 Mar 03	Pierce Middle School	Redford, MI	50	0	0
06 Mar 03	06 Mar 03	Plum Point Middle School	Huntingtown, MD	400	0	0
06 Mar 03	06 Mar 03	Shady Side Elementary School	Suitland, MD	83	0	0
06 Mar 03	10 Jun 03	Columbia University	New York, NY	0	100	0
07 Mar 03	07 Mar 03	Anne Arundel County Public Schools	Anne Arundel County, MD	0	3	0
07 Mar 03	07 Mar 03	Oakleigh Elementary School.	Baltimore, MD	9	0	0
10 Mar 03	10 Mar 03	Baton Rouge Schools	Baton Rouge, LA	0	50	0
10 Mar 03	10 Mar 03	Newport Mill Middle School	Kensington, MD	230	0	0
11 Mar 03	11 Mar 03	C.C.A. Baldi Middle School	Philadelphia, PA	99	0	0
12 Mar 03	12 Mar 03	Fairborn High School	Fairborn, OH	125	0	0
12 Mar 03	12 Mar 03	Oakwood High School	Dayton, OH	14	0	0
13 Mar 03	13 Mar 03	Miamisburg High School	Miamisburg, OH	157	0	0
13 Mar 03	13 Mar 03	Trotwood-Madison High School	Trotwood, OH	42	0	0
14 Mar 03	14 Mar 03	Beavercreek High School	Beavercreek, OH	728	0	0
14 Mar 03	14 Mar 03	Glenec Country School	Columbia, MD	60	0	0
14 Mar 03	14 Mar 03	Kettering Middle School	Kettering, OH	391	0	0
15 Mar 03	15 Mar 03	Harford County Astronomical Society	Bel Air, MD	0	30	0
15 Mar 03	16 Mar 03	Computefest	Dayton, OH	0	2,000	0

17 Mar 03	17 Mar 03	Ascension School	Halethorpe, MD	27	0	0
17 Mar 03	17 Mar 03	Delta Church of the Nazarene	Delta, PA	0	25	0
18 Mar 03	15 Apr 03	Harford Community College	Bel Air, MD	0	17	0
20 Mar 03	20 Mar 03	North Jersey Astronomical Group	Clifton, NJ	0	20	0
21 Mar 03	21 Mar 03	St. Johns College	Annapolis, MD	0	30	0
22 Mar 03	29 Mar 03	Space Telescope Science Institute	Baltimore, MD	0	200	0
24 Mar 03	24 Mar 03	Manalapan High School	Manalapan, NJ	62	0	0
27 Mar 03	27 Mar 03	Pennsylvania State University	University Park, PA	0	700	0
27 Mar 03	30 Mar 03	I-CON SciFi Convention	Stony Brook, NY	0	750	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	1,500	0
28 Mar 03	28 Mar 03	Baltimore Jewish Times	Baltimore, MD	0	50,000	0
28 Mar 03	28 Mar 03	United Astronomy Clubs of New Jersey	Crawford, NJ	0	15	0
31 Mar 03	31 Mar 03	Gallatin Schools	Gallatin, TN	0	50	0
31 Mar 03	01 Apr 03	University of Washington	Seattle, WA	0	15	0
08 Apr 03	08 Apr 03	Jones Magnet Middle School	Hampton, VA	0	200	0
09 Apr 03	12 Apr 03	National Council of Teachers of Mathematics National Conference	San Antonio, TX	0	360	0
10 Apr 03	10 Apr 03	Mad Science of South Orange County	Laguna Hills, CA	0	200	0
10 Apr 03	10 Apr 03	Maryland Science Center	Baltimore, MD	0	50	0
10 Apr 03	10 Apr 03	Owings Mills Elementary School	Owings Mills, MD	104	0	0
11 Apr 03	11 Apr 03	Lewis Cass High School	Walton, IN	100	0	0
14 Apr 03	14 Apr 03	DeMiguel Elementary School	Flagstaff, AZ	5	0	0
15 Apr 03	15 Apr 03	Century High School	Eldersburg, MD	41	0	0
15 Apr 03	15 Apr 03	Chatham College	Pittsburgh, PA	1	0	0
15 Apr 03	15 Apr 03	Roberto Clemente Middle School	Germantown, MD	100	0	0
15 Apr 03	16 Apr 03	National Organization of Black Chemists and Chemical Engineers Annual Conference	Indianapolis, IN	200	0	0
16 Apr 03	16 Apr 03	Samford University	Birmingham, AL	1	0	0
17 Apr 03	17 Apr 03	Kenwood High School	Baltimore, MD	72	0	0
17 Apr 03	17 Apr 03	Villa Julie College	Baltimore, MD	25	0	0
21 Apr 03	22 Apr 03	StanKraft, Inc.	Skokie, IL	0	65	0
22 Apr 03	22 Apr 03	Maryland Science Center	Baltimore, MD	0	40	0
23 Apr 03	23 Apr 03	C.C.A. Baldi Middle School	Philadelphia, PA	25	0	0
24 Apr 03	24 Apr 03	Defense Contract Management Agency	Baltimore, MD	0	35	0
25 Apr 03	25 Apr 03	George Fox Middle School	Pasadena, MD	250	0	0
28 Apr 03	28 Apr 03	Ascension School	Halethorpe, MD	0	90	0
28 Apr 03	28 Apr 03	New Emerson Elementary School	Grand Junction, CO	0	100	0
29 Apr 03	29 Apr 03	Overlook Elementary School	Temple Hills, MD	0	100	0
30 Apr 03	30 Apr 03	Gloucester County Schools	Gloucester, VA	0	20	0
01 May 03	01 May 03	NASA Astrobiology Institute	Moffett Field, CA	0	1,000	0
02 May 03	02 May 03	James McHenry Elementary School	Baltimore, MD	0	1	0
02 May 03	02 May 03	University of Nevada, Reno	Reno, NV	0	200	0
03 May 03	03 May 03	Maryland Science Center	Baltimore, MD	0	500	0
05 May 03	05 May 03	Boy Scout Troop 792	Towson, MD	0	22	0
07 May 03	07 May 03	Plum Point Elementary School	Huntingtown, MD	0	100	0
08 May 03	08 May 03	Berks County Amateur Astronomical Society	Reading, PA	0	30	0
08 May 03	08 May 03	Swales Aerospace	Beltsville, MD	0	20	0
08 May 03	08 May 03	Worthington Elementary School	Ellicott City, MD	20	0	0
10 May 03	10 May 03	Space Telescope Science Institute	Baltimore, MD	0	100	0
12 May 03	12 May 03	Cardinal Sheehan School	Baltimore, MD	156	0	0
14 May 03	14 May 03	Smithsonian National Air and Space Museum	Washington, DC	0	250	0
15 May 03	15 May 03	American Association of Museums	Washington, DC	0	100	0
15 May 03	15 May 03	American Association of Physics Teachers	College Park, MD	0	31	0
17 May 03	17 May 03	Michigan Bureau of Aeronautics	Lansing, MI	0	200	0
20 May 03	20 May 03	Bollman Bridge Elementary School	Jessup, MD	0	30	0
20 May 03	20 May 03	St. Marks School	Catonsville, MD	0	33	0

21 May 03	21 May 03	Pennsylvania State University	University Park, PA	0	3,000	0
23 May 03	23 May 03	Buckeye Ranch School	Grove City, OH	0	85	0
23 May 03	26 May 03	BaltiCon SciFi Convention	Baltimore, MD	0	500	0
24 May 03	24 May 03	Faith Lutheran Day Care Center	Eldersburg, MD	21	0	0
24 May 03	24 May 03	Marcon Science Fiction Group	Columbus, OH	0	150	0
26 May 03	26 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	200	0
29 May 03	29 May 03	Audubon Louisiana Nature Center	New Orleans, LA	0	200	0
30 May 03	30 May 03	Abingdon Elementary School	Abingdon, MD	30	0	0
30 May 03	01 Jun 03	Vulkon-Science Fiction Convention	Tampa, FL	0	400	0
02 Jun 03	23 Jun 03	New Emerson Elementary School	Grand Junction, CO	0	100	0
03 Jun 03	03 Jun 03	Texas Space Grant Consortium	Austin, TX	0	35	0
03 Jun 03	03 Jun 03	University of Wisconsin-Madison	Madison, WI	0	20	0
04 Jun 03	30 Jun 03	California Institute of Technology	Pasadena, CA	0	200	0
06 Jun 03	06 Jun 03	Cherry Creek Elementary School	Lowell, MI	0	950	0
06 Jun 03	06 Jun 03	Pennsylvania State University	University Park, PA	0	80	0
06 Jun 03	06 Jun 03	U.S. Space and Rocket Center	Huntsville, AL	0	100	0
09 Jun 03	09 Jun 03	S'Cool	Hamden, VA	0	40	0
09 Jun 03	09 Jun 03	Southeast Museum of Photography	Daytona, FL	0	200	0
09 Jun 03	09 Jun 03	University of Wyoming	Laramie, WY	0	75	0
12 Jun 03	12 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	30	0	0
13 Jun 03	13 Jun 03	Riviera Beach Elementary School	Pasadena, MD	78	0	0
16 Jun 03	16 Jun 03	University of Hawaii at Manoa	Honolulu, HI	0	30	0
16 Jun 03	16 Jun 03	University of Washington	Seattle, WA	23	0	0
16 Jun 03	16 Jun 03	University of Washington	Seattle, WA	0	26	0
17 Jun 03	17 Jun 03	Morehead State University	Morehead, KY	1	0	0
26 Jun 03	26 Jun 03	Amateur Astronomers Association of Pittsburgh	Glenshaw, PA	0	100	0
30 Jun 03	30 Jun 03	Pacific Science Center	Seattle, WA	0	20	0
03 Jul 03	03 Jul 03	Maryland Science Center	Baltimore, MD	32	0	0
09 Jul 03	09 Jul 03	Maryland Science Center	Baltimore, MD	0	33	0
11 Jul 03	13 Jul 03	SciFi Convention, Shore Leave 25	Hunt Valley, MD	0	1,500	0
16 Jul 03	16 Jul 03	Towson University	Towson, MD	0	50	0
17 Jul 03	17 Jul 03	Little Falls Friends Meeting	Fallston, MD	0	50	0
18 Jul 03	18 Jul 03	Howard County Public Library	Ellicott City, MD	0	25	0
23 Jul 03	23 Jul 03	Youth Benefit Elementary School	Fallston, MD	0	45	0
24 Jul 03	24 Jul 03	Mount de Sales Academy	Catonsville, MD	20	0	0
01 Aug 03	01 Aug 03	Church of the Redeemer	Baltimore, MD	0	10	0
05 Aug 03	05 Aug 03	National Optical Astronomy Observatory	Tucson, AZ	0	40	0
06 Aug 03	06 Aug 03	Great Falls Public School	Great Falls, MT	100	0	0
06 Aug 03	06 Aug 03	Space Telescope Science Institute	Baltimore, MD	0	25	0
07 Aug 03	07 Aug 03	Western Colorado Math and Science Center	Grand Junction, CO	0	250	0
21 Aug 03	24 Aug 03	Poland National Science Fiction Convention	Elblag, Poland	0	1,500	0
05 Sep 03	05 Sep 03	College of Charleston	Charleston, SC	0	40	0
06 Sep 03	06 Sep 03	Columbia University	New York, NY	0	70	0
06 Sep 03	06 Sep 03	Girl Scouts	Baltimore, MD	0	100	0
09 Sep 03	09 Sep 03	Girl Scouts	Phoenix, MD	0	17	0
09 Sep 03	09 Sep 03	Guanica Schools	Guanica, PR	0	50	0
15 Sep 03	15 Sep 03	Western Colorado Math and Science Center	Grand Junction, CO	0	30	0
24 Sep 03	24 Sep 03	Earth and Space Science Labs	Frederick, MD	0	60	0
24 Sep 03	24 Sep 03	University of Hawaii at Manoa	Honolulu, HI	0	30	0
30 Sep 03	30 Sep 03	Owen Brown Middle School	Columbia, MD	25	0	0

A229. "Living in the Universe—Points of View"

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SRT[B3]

Description: This project will lead to the creation of interactive Web tools for conveying a wide range of concepts in introductory astronomy, with emphasis on tools that use real astronomy data and those that convey complex 2-D and 3-D information in an easily accessible form. Widely used and standard Web protocols will be used, such

as Java and Java3D and XML, and the final applets will be packaged in Sun's WebStart environment to enable seamless operation on all of the major computer platforms and in all the major browsers. The primary audience is non-science majors in introductory astronomy classes of which there are 2,000 per year at the University of Arizona and 250,000 per year nationwide.

Lead: Dr. Chris Impey, University of Arizona, Tucson, AZ 85721. E-mail: cimpey@as.arizona.edu. Phone: 520-621-6522.

Primary URL: <http://www.astronomica.org>

Scientist(s): Dr. Chris Impey University of Arizona Tucson, AZ

A230. LWS Information Technology Program

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: This information technology workshop was developed to promote technology literacy for K–12 STP/LWS E/PO partners across the United States and Puerto Rico. Participants had the opportunity to learn how to create a Web lesson and Web pages, an e-portfolio and information technology activities to use in the classroom.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>

2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s): Mr. Willy Santos University of Puerto Rico at Rio Piedras Rio Piedras, PR
Ms. DeLee Smith NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Jul 03	24 Jul 03	University of Puerto Rico at Rio Piedras	Rio Piedras, PR	76	4	0

A231. MicroObservatory Online Telescopes

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: Many students have a deep interest in astronomy, but limited opportunities to use telescopes to explore the heavens. The MicroObservatory network of five robotic, online telescopes enables middle and high school teachers and their students to investigate the night sky from the convenience of their classrooms. By means of an intuitive Web interface, students control the telescopes by specifying the target, exposure time, observation time, filter, and site location. Located at sites around the world, the telescopes have a combined capability of a quarter of a million observations each year. Students in 20 states now access the telescopes to carry out investigations, ranging from the distance to the Moon to the expansion of the Universe. We evaluated the learning improvements of students who used our network of online, automated telescopes to carry out investigations in astronomy and space science. We drew on items from the Astronomical Concept Inventory, an assessment designed to discriminate between the attractiveness of common misconceptions in astronomy and physical science—including light and color, astronomical scale, and distance patterns of motion in time and space—and quantitative measurement and estimation. Initial results showed significant gains. There were particularly striking gains in students' ability to solve the math problems on the assessment. We conclude that inquiry-driven investigations, using online telescopes, can enhance student learning in astronomy, physical science, and mathematics.

Lead: Dr. Roy Gould, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: rgould@cfa.harvard.edu. Phone: 617-496-7689.

Primary URL: <http://mo-www.harvard.edu/MicroObservatory>

Scientist(s): Ms. Mary Dussault Harvard-Smithsonian Center for Astrophysics Cambridge, MA
Dr. Roy Gould Harvard-Smithsonian Center for Astrophysics Cambridge, MA
Dr. Jennifer Grier Harvard-Smithsonian Center for Astrophysics Cambridge, MA
Dr. Irene Porro Massachusetts Institute of Technology Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Sep 02	05 Jan 03	Museum of Science	Boston, MA	0	2511	0
30 Sep 02	30 Jun 03	Brooks School	North Andover, MA	31	0	0
30 Sep 02	30 Jun 03	Burlington High School	Burlington, MA	61	0	0

30 Sep 02	30 Jun 03	Crystal High School	Carson City, MI	53	0	0
30 Sep 02	30 Jun 03	Cummings School	Somerville, MA	25	0	0
30 Sep 02	30 Jun 03	Fenway High School	Boston, MA	32	0	0
30 Sep 02	30 Jun 03	Lincoln-Sudbury Regional High School	Sudbury, MA	91	0	0
30 Sep 02	30 Jun 03	Milton Academy	Milton, MA	31	0	0
30 Sep 02	30 Jun 03	North Davidson High School	Lexington, NC	36	0	0
30 Sep 02	30 Jun 03	Northwest Guilford High School	Greensboro, NC	86	0	0
30 Sep 02	30 Jun 03	Northwest Middle School	Kansas City, KS	61	0	0
02 Feb 03	05 Sep 03	Midland Center for the Arts	Midland, MI	0	1,612	0
30 Apr 03	30 Sep 03	American Museum of Natural History	New York, NY	31	0	0

A232. "Passport to the Solar System" (PTSS)

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: P2K[B9], HST[B22], SOFIA[B26], KECK[B28], NAI[B34], 2MASS[B35], Cassini/Huygens Probe[B37], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], MGS[B43], Mars Pathfinder[B44], MRO[B45], MSL[B46], Viking[B47], CONTOUR[B50], Genesis[B52], MESSENGER[B54], NEAR[B55], Stardust[B56], Mars Express[B63], CXO[B65], CGRO[B66], Constellation-X[B67], EUVE[B73], COBE[B82], Ulysses[B89], Voyager[B90], TIMED[B97], ACE[B98], IMAGE[B100], TRACE[B106], Polar[B110], Wind[B111], SOHO[B112], LWS[B114], Yohkoh[B117]

Description: PTSS is a series of eight 15-minute video programs and two 30-minute teacher inservice programs, supported by hands-on activities and online resources. PTSS connects the ongoing exploration of the Solar System to key concepts in the core science curriculum. Using NASA researchers as on-camera presenters (and as role models for careers in science), PTSS presents results from recent missions to enliven the national science education standards and AAAS/Project 2061 benchmarks with current imagery and discoveries. The video programs, broadcast by participating PBS stations and state networks, are accompanied by teacher guides that offer nearly 80 hands-on activities, an implementation guide, and a companion Web site. During the 2001–2002 school year, "Passport to Knowledge" (P2K) added a new 30-minute program, "P2K Update: Solar System," that provided teachable moments from late-breaking research, such as the NEAR spacecraft landing on the asteroid Eros, recent discoveries about water on Mars, the African eclipse, and more. Throughout 2002–2003, online updates linked to breaking space science news and including NASA press releases, were distributed via e-mail and archived in the PTSS "New and Now" section of the PTSS Web site.

Lead: Ms. Erna Akuginow, Geoff Haines-Stiles Productions, Inc., Morristown, NJ 07960. E-mail: ea@passsportto-knowledge.com. Phone: 973-656-9403.

Primary URL: <http://passporttoknowledge.com/solarsystem>

2nd URL: <http://passporttoknowledge.com>

Scientist(s):	Dr. Claudia Alexander	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. David Alexander	Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA
	Dr. Raymond Arvidson	Washington University	St. Louis, MO
	Dr. Alberto Behar	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Kerri Beisser	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Andrew Cheng	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Chris Chyba	SETI Institute	Mountain View, CA
	Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Craig De Forest	Southwest Research Institute	Boulder, CO
	Dr. Eric De Jong	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Thomas Duxbury	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Matthew Golombek	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Beth Jacob	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Torrence Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Therese Kucera	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Wayne Lee	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Rob Manning	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Geoff Marcy	San Francisco State University	San Francisco, CA
	Dr. Kenneth Nealon	NASA Jet Propulsion Laboratory	Pasadena, CA

	Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Stephen Pompea	Pompea and Associates	Tucson, AZ
	Ms. Anita Sohus	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Tony Spear	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Marguerite Syvertson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Kathie Thomas-Keptra	NASA Johnson Space Center	Houston, TX
	Dr. Barbara Thompson	NASA Goddard Space Flight Center	Greenbelt, MD
Partner(s):	Carnegie Institution of Washington		Washington, DC
	Carnegie Observatories		Pasadena, CA
	European Southern Observatory		Santiago, Chile
	European Space Agency Research and Technology Centre		Noorwick, Netherlands
	Fermi National Accelerator Laboratory		Batavia, IL
	Gemini Observatory		Hilo, HI
	Goldstone Deep Space Communications Complex		Fort Irwin, CA
	Harvard-Smithsonian Center for Astrophysics		Cambridge, MA
	Johns Hopkins Applied Physics Laboratory		Laurel, MD
	Lawrence Berkeley National Laboratory		Berkeley, CA
	Lawrence Livermore National Laboratory		Livermore, CA
	Lockheed Martin Solar and Astrophysics Lab		Palo Alto, CA
	Lockheed Martin Space Systems		Littleton, CO
	Marine Biological Laboratory		Woods Hole, MA
	NASA Ames Research Center		Moffett Field, CA
	NASA Astrobiology Institute		Moffett Field, CA
	NASA Glenn Research Center		Cleveland, OH
	NASA Goddard Institute for Space Studies		New York, NY
	NASA Goddard Space Flight Center		Greenbelt, MD
	NASA Jet Propulsion Laboratory		Pasadena, CA
	NASA Johnson Space Center		Houston, TX
	NASA Kennedy Space Center		Kennedy Space Center, FL
	NASA Langley Research Center		Hampton, VA
	NASA Marshall Space Flight Center		Marshall Space Flight Center, AL
	NASA Office of Earth Science		Washington, DC
	NASA Office of Space Science		Washington, DC
	National Center for Atmospheric Research		Boulder, CO
	National Oceanic and Atmospheric Administration		Boulder, CO
	National Optical Astronomy Observatory		Tucson, AZ
	National Science Foundation		Arlington, VA
	National Severe Storms Laboratory		Norman, OK
	National Solar Observatory		Sunspot, NM
	SETI Institute		Mountain View, CA
	Space Explorers, Inc.		Green Bay, WI
	Space Foundation		Colorado Springs, CO
	Space Telescope Science Institute		Baltimore, MD
	U.S. Geological Survey		Flagstaff, AZ
	W.M. Keck Observatory		Kamuela, HI
	Woods Hole Oceanographic Institute		Woods Hole, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	Georgia Public Broadcasting	Atlanta, GA	0	1,518,827	10,000
01 Oct 02	30 Sep 03	KEDT-TV, Channel 16/Corpus Christi	Corpus Christi, TX	0	99,926	4055
01 Oct 02	30 Sep 03	KERA-TV, Channel 13/Dallas-Fort Worth	Dallas, TX	0	328,000	3,000
01 Oct 02	30 Sep 03	Louisiana Educational Television Authority	Baton Rouge, LA	0	746,993	10,000
01 Oct 02	30 Sep 03	Richardson Independent School District	Richardson, TX	0	61,541	750
01 Oct 02	30 Sep 03	Safety-Net	Austin, TX	0	6,300	630

01 Oct 02	30 Sep 03	San Diego County Office of Education	San Diego, CA	0	463,000	1,000
01 Oct 02	30 Sep 03	WCVE, Community Idea Stations	Richmond, VA	0	319,764	1,000
01 Oct 02	30 Sep 03	West Virginia Public Television	Morgantown, WV	0	315,785	10,000
01 Oct 02	30 Sep 03	WNED-TV, Channel 17/Buffalo	Buffalo, NY	0	3,164,335	20,000
01 Oct 02	30 Sep 03	WNPT-TV, Channel 8/Nashville	Nashville, TN	0	128,494	1,000
01 Oct 02	30 Sep 03	WPBA-TV, Channel 30/Atlanta	Atlanta, GA	0	59,436	500
01 Oct 02	30 Sep 03	WVPT-TV, Channel 51/Harrisonburg	Harrisonburg, VA	0	107,920	750
10 Oct 02	30 Sep 03	Wisconsin Educational Telecommunications Board	Madison, WI	0	909,476	20000

A233. Practical Uses of Math and Science (PUMAS)

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12]

Description: PUMAS is a collection of one-page examples of how math and science topics taught in K-12 classes can be used in interesting settings, including everyday life. The examples are written primarily by scientists and engineers and are available to teachers, students, and other interested parties via the PUMAS Web site. Our goal is to capture, for the benefit of precollege education, the flavor of the vast experience that working scientists have with interesting and practical uses of math and science.

Lead: Mr. Ralph Kahn, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Ralph.A.Kahn@jpl.nasa.gov. Phone: 818-354-9024.

Primary URL: <http://pumas.jpl.nasa.gov>

Scientist(s):	Ms. Kim Aaron	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Lin Chambers	NASA Langley Research Center	Hampton, VA
	Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Ralph Kahn	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Evan Manning	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Tom Nolan	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Lorraine Remer	NASA Goddard Space Flight Center	Greenbelt, MD

A234. RHESSI: Curriculum Dissemination

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], RHESSI[B102]

Description: RHESSI E/PO personnel participate in events that allow for the dissemination of curriculum materials developed and produced by the RHESSI mission.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: http://cse.ssl.berkeley.edu/hessi_epo

Scientist(s): Dr. Nahide Craig University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Mar 03	21 Mar 03	Occidental College	Los Angeles, CA	0	100	0
16 Jun 03	27 Jun 03	New Emerson Elementary School	Grand Junction, CO	0	60	0

A235. "Science Concepts in Context"

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: OSS/Outreach[B7], P2K[B9], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14], HST[B22], SST[B25], SOFIA[B26], KECK[B28], NAI[B34], 2MASS[B35], Cassini/Huygens Probe[B37], Galileo[B38], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], MGS[B43], Mars Pathfinder[B44], Viking[B47], CONTOUR[B50], MESSENGER[B54], NEAR[B55], Stardust[B56], DS1[B58], Mars Express[B63], Rosetta[B64], CXO[B65], CGRO[B66], Constellation-X[B67], COBE[B82], XMM-Newton[B86], Ulysses[B89], Voyager[B90], STP[B91], TIMED[B97], ACE[B98], IMAGE[B100], IMP-8[B101], RHESSI[B102], TRACE[B106], Cluster II[B108], Geotail[B109], Polar[B110], Wind[B111], SOHO[B112], LWS[B114], Yohkoh[B117]

Description: The Passport to Knowledge (P2K) "Science Concepts in Context" series features contemporary space science and several current NASA missions in order to relate exciting content to key concepts in the science curriculum for grades 5-9. Debuting in the 2002-2003 school year, the series continues to be carried by several major public television stations (including all 11 in New York State), statewide education networks (such as Wisconsin and Ohio), and many big-city school districts (such as Los Angeles, San Diego, and Dallas), reaching a potential K-12 student population of some 7 million students. Six of the 16 videos are 15 minutes long, cover the terrestrial planets (principally Earth and Mars), the NEAR mission to Eros, comets, the Galileo mission to Jupiter, life in extreme environments, the 2002 HST servicing mission, and the latest images and animation from several NASA spacecraft and Centers. Science concepts illuminated by the four space science videos include gravity, force and motion, the electromagnetic spectrum, atoms and elements, fission and fusion, adaptation and natural selection (in the life science unit), and "science as a human enterprise." A new Web site provides hands-on activities and links to NASA resources. The site correlates with the science frameworks and guidelines of all 50 states, as well as the national science standards and Project 2061 benchmarks. Each video also features one or more NASA or NASA-supported researchers, such as Wayne Lee, Claudia Alexander, Lloyd French, Andrew Cheng, James Farquhar, Kathryn Flanagan, Ken Nealson, and Andrea Ghez. Through engaging, direct to camera presentations, the researchers explain the concepts and their application to real-world research. Balanced in gender and background, the researchers also serve as inspirational mentors for students of diverse cultures and origins.

Lead: Ms. Erna Akuginow, Geoff Haines-Stiles Productions, Inc., Morristown, NJ 07960. E-mail: ea@passsporttoknowledge.com. Phone: 973-656-9403.

Primary URL: <http://passsporttoknowledge.com/scic>

2nd URL: <http://passsporttoknowledge.com>

Scientist(s):	Dr. Claudia Alexander	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Richard Alley	Pennsylvania State University	University Park, PA
	Dr. Andrew Cheng	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Chris Chyba	SETI Institute	Mountain View, CA
	Dr. Craig De Forest	Southwest Research Institute	Boulder, CO
	Dr. James Farquhar	University of Maryland	College Park, MD
	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Lloyd French	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Andrea Ghez	University of California, San Diego	La Jolla, CA
	Dr. Wayne Lee	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Kenneth Nealson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Cynthia Rosensweig	NASA Goddard Institute for Space Studies	New York, NY
	Dr. Michael Turner	University of Chicago	Chicago, IL
Partner(s):	American Institute of Physics		College Park, MD
	California Institute of Technology		Pasadena, CA
	Carnegie Institution of Washington		Washington, DC
	Carnegie Observatories		Pasadena, CA
	European Southern Observatory		Santiago, Chile
	European Space Agency		Paris, France
	European Space Agency Research and Technology Centre		Noorwick, Netherlands
	Fermi National Accelerator Laboratory		Batavia, IL
	Gemini Observatory		Hilo, HI
	Goldstone Deep Space Communications Complex		Fort Irwin, CA
	Harvard-Smithsonian Center for Astrophysics		Cambridge, MA
	Johns Hopkins Applied Physics Laboratory		Laurel, MD
	Lawrence Berkeley National Laboratory		Berkeley, CA
	Lawrence Livermore National Laboratory		Livermore, CA
	Lockheed Martin Advanced Technology Center		Palo Alto, CA
	Lockheed Martin Astronautics		San Diego, CA
	Lockheed Martin Solar and Astrophysics Lab		Palo Alto, CA
	Lockheed Martin Space Systems		Littleton, CO
	Los Alamos National Laboratory		Los Alamos, NM
	Lowell Observatory		Flagstaff, AZ
	Marine Biological Laboratory		Woods Hole, MA
	NASA Ames Research Center		Moffett Field, CA

NASA Astrobiology Institute
 NASA Glenn Research Center
 NASA Goddard Institute for Space Studies
 NASA Goddard Space Flight Center
 NASA Jet Propulsion Laboratory
 NASA Johnson Space Center
 NASA Kennedy Space Center

NASA Langley Research Center
 NASA Marshall Space Flight Center

NASA Office of Earth Science
 NASA Office of Space Flight
 NASA Office of Space Science
 National Center for Atmospheric Research,
 National Oceanic and Atmospheric Administration,
 National Optical Astronomy Observatory
 National Radio Astronomy Observatory
 National Science Foundation
 National Severe Storms Laboratory
 National Solar Observatory
 SETI Institute
 Smithsonian Institution
 Southwest Research Institute
 Southwest Research Institute
 Space Explorers, Inc.
 Space Telescope Science Institute
 University Corporation for Atmospheric Research
 W.M. Keck Observatory
 Woods Hole Oceanographic Institute

Moffett Field, CA
 Cleveland, OH
 New York, NY
 Greenbelt, MD
 Pasadena, CA
 Houston, TX
 Kennedy Space Center,
 FL
 Hampton, VA
 Marshall Space Flight
 Center, AL
 Washington, DC
 Washington, DC
 Washington, DC
 Boulder, CO
 Boulder, CO
 Tucson, AZ
 Socorro, NM
 Arlington, VA
 Norman, OK
 Sunspot, NM
 Mountain View, CA
 Washington, DC
 San Antonio, TX
 Boulder, CO
 Green Bay, WI
 Baltimore, MD
 Boulder, CO
 Kamuela, HI
 Woods Hole, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 02	30 Aug 03	Charlotte-Mecklenburg Schools and CMS-TV	Charlotte, NC	0	214,300	1,000
01 Sep 02	30 Aug 03	KERA-TV, Channel 13/Dallas-Fort Worth	Dallas, TX	0	367,291	2,500
01 Sep 02	30 Aug 03	Los Angeles County Office of Education	Downey, CA	0	539,400	2,500
01 Sep 02	30 Aug 03	New Jersey Network	Trenton, NJ	0	1,563,421	2,500
01 Sep 02	30 Aug 03	Ohio Educational Telecommunications Association	Cincinnati, OH	0	154,012	750
01 Sep 02	30 Aug 03	Richardson Independent School District	Richardson, TX	0	57,541	100
01 Sep 02	30 Aug 03	WGVU-TV, Channel 35/ Grand Rapids	Grand Rapids, MI	0	195,208	500
01 Sep 02	30 Aug 03	Wisconsin Educational Telecommunications Board	Madison, WI	0	905,341	2,500
01 Sep 02	30 Aug 03	WNED-TV, Channel 17/Buffalo	Buffalo, NY	0	3,164,335	10,000
01 Sep 02	30 Aug 03	WSBE-TV, Channel 36/Providence	Providence, RI	0	189,402	250

A236. SECEF: Formal Education Curriculum Development

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: SECEF collaborates with educators, curriculum developers, and scientists in the creation of standards-based curricular materials for grades K–12. The materials include inquiry-based activities, print, and multimedia resources that meet the needs of target audiences and provide appropriate access to NASA mission discoveries and results.

Lead: Dr. Isabel Hawkins, University of California, Berkeley, Berkeley, CA 94720. E-mail: isabelh@ssl.berkeley.edu.
 Phone: 510-643-5662.

Scientist(s): Dr. Vassilis Angelopoulos University of California, Berkeley
 Ms. Jacqueline Barber University of California, Berkeley

Berkeley, CA
 Berkeley, CA

Mr. Kevin Beals	University of California, Berkeley	Berkeley, CA
Mr. Lincoln Bergman	University of California, Berkeley	Berkeley, CA
Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
Ms. Rose Craig	University of California, Berkeley	Berkeley, CA
Mr. John Erickson	University of California, Berkeley	Berkeley, CA
Dr. George Fisher	University of California, Berkeley	Berkeley, CA
Dr. Richard Fisher	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. David Glaser	University of California, Berkeley	Berkeley, CA
Dr. Alan Gould	Lawrence Hall of Science	Berkeley, CA
Mr. Stefan Gutermuth	University of California, Berkeley	Berkeley, CA
Ms. Karin Hauck	University of California, Berkeley	Berkeley, CA
Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Therese Kucera	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Sara Leavitt	University of California, Berkeley	Berkeley, CA
Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Janet Luhmann	University of California, Berkeley	Berkeley, CA
Dr. Stephen Mende	University of California, Berkeley	Berkeley, CA
Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Kathleen O'Sullivan	San Francisco State University	San Francisco, CA
Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
Ms. Nicole Parizeau	University of California, Berkeley	Berkeley, CA
Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Stephen Pompea	Pompea and Associates	Tucson, AZ
Mr. Igor Ruderman	University of California, Berkeley	Berkeley, CA
Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
Ms. Florence Stone	University of California, Berkeley	Berkeley, CA
Dr. Richard Vondrak	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Carolyn Willard	University of California, Berkeley	Berkeley, CA

A237. Sun-Earth Connection: Presentation and Inquiry Resources for Scientists in K-12 Classrooms

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: The goal of this project is to develop educational resources (images, slide sets, and hands-on demonstrations) that scientists can draw upon when preparing to visit K-12 classrooms to discuss research performed by the National Center for Atmospheric Research's High Altitude Observatory (HAO) and the basic science concepts students need to know to meet science knowledge benchmarks in local school districts. The basis for these resources will include content that is generic to Sun-Earth Connection research, while research at HAO in studying the influence of solar storms on Earth's geomagnetic fields provides a special opportunity to emphasize information about magnetism, space weather, and the influence of solar storms on Earth.

Lead: Dr. Gang Lu, National Center for Atmospheric Research, Boulder, CO 80305. E-mail: ganglu@ucar.edu. Phone: 303-497-1554.

Contact: Ms. Susan Foster, National Center for Atmospheric Research, Boulder, CO 80305. E-mail: susanf@ucar.edu. Phone: 303-497-2595.

Scientist(s):	Dr. Roberta Johnson	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Gang Lu	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Astrid Maute	University Corporation for Atmospheric Research	Boulder, CO
	Dr. Art Richmond	University Corporation for Atmospheric Research	Boulder, CO

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jul 03	15 Sep 03	National Center for Atmospheric Research	Boulder, CO	6	0	0

A238. Video and Laboratory Curriculum in NASA OSS Themes for DC Public Schools

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: Program will facilitate education in the Washington, DC public schools in science and technology areas related to the four NASA OSS themes: (1) Sun-Earth Connection, (2) Solar System Exploration, (3) Astronomical Search for Origins and Planetary Systems, and (4) Structure and Evolution of the Universe. This will be done by creating a set of four videos (one on each of the four NASA themes), and complementary hands-on activities (some of which will be demonstrated in the videos) intended for pre-college students. These can be used in classrooms and in after-school/Saturday supplementary education programs. This activity, intended for students (and their teachers) at the middle school (grades 6-8) and high school (grades 9-12) levels, will include active involvement by educators and students in the DC public schools. Teachers and students will participate in the design and production of these videos, and beta test the hands-on activities. Once created, these educational materials can also be used in other schools, potentially nationwide. The proposed activities will also be designed to support the schools in meeting the new standards and benchmarks of science education, specifically in the areas of Earth and space science and of physical science. The activity is a follow-on to a previous video series in Earth and space science that was originally funded by NASA IDEAS grants.

Lead: Dr. George Carruthers, S.M.A.R.T., Inc., Washington, DC 20024-0871. E-mail: george.carruthers@nrl.navy.mil. Phone: 202-767-2764.

Scientist(s): Dr. George Carruthers, Naval Research Laboratory

Washington, DC

Partner(s): District of Columbia Space Grant

Washington, DC

A239. "Voyages Through Time": High School Astrobiology Curriculum

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: In partnership with NAI, the National Science Foundation, the California Academy of Sciences, and San Francisco State University, the SETI Institute have developed "Voyages Through Time" (VTT), a standards-based integrated science curriculum for high school centered on the unifying theme of evolution. Scientists, teachers, curriculum writers, and media specialists have created six CD-ROM modules that integrate astronomical, geological, and biological sciences. The sequence of lessons in each module is designed to promote students' understanding of science and skills as defined by the National Science Education Standards and Benchmarks for Science Literacy. The six modules, "Cosmic Evolution", "Planetary Evolution", "Origin of Life", "Evolution of Life", "Hominid Evolution", and "Evolution of Technology", use the constructivist approach of "engage, explore, explain, elaborate, and evaluate" (Biological Sciences Curriculum Study, 1996) as an instructional framework. NAI funded the VTT national field test and a CD-ROM sampler of the curriculum. Over 1,500 CD-ROM samplers were distributed at science teacher conferences this year and a revised sampler will be distributed next year. The national field test took place from September 2001 through July 2002 in over 80 classrooms in 28 states. Teacher feedback was very positive, and the curriculum was revised following the national test evaluation summary reports. The curriculum was published in August 2003.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Primary URL: <http://www.voyagesthroughtime.org>

Partner(s): SETI Institute

Mountain View, CA

Student Support**A240. Adler After School**

Theme(s): SEU, SSE

Msn/Prgm: Adler Center for Space Science Education[B5], HST[B22], NEAR[B55], CXO[B65]

Description: Students participated in an hour-long, live hands-on activity and demonstration-based program via a video-conferencing link between the Adler Planetarium and the Charles Hayes Family Investment Center in Chicago, IL. Topics for Adler After School events were "Telescopes," "Black Holes and Gravity," and "Asteroids and Meteors."

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Feb 03	18 Feb 03	Charles Hayes Family Investment Center	Chicago, IL	20	0	0
20 Feb 03	20 Feb 03	Charles Hayes Family Investment Center	Chicago, IL	20	0	0
06 Mar 03	06 Mar 03	Charles Hayes Family Investment Center	Chicago, IL	20	0	0

A241. Aeronautical Exposition for Students

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: NASA Ames Research Center hosted an annual 2-day program of field trips for students from area schools. Presentations emphasize aeronautics, space exploration, science, engineering, and technology careers for elementary and middle school students. The focus of the program is on outreach to schools with students who are predominantly underrepresented in technical fields.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Primary URL: <http://education.arc.nasa.gov>

Scientist(s):	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA
	Mr. Allan Meyer,	Universities Space Research Association	Moffett Field, CA
	Ms. Leslie Proudfit	NASA Ames Research Center	Moffett Field, CA
	Mr. Eric Wang	Universities Space Research Association	Moffett Field, CA
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Dec 02	12 Dec 02	NASA Ames Research Center	Moffett Field, CA	0	1,040	0

A242. Astromaterials-Astrobiology Student Presentations

Theme(s): ASO, SSE

Msn/Prgm: Astromaterials Program[B57]

Description: NASA's Johnson Space Center space scientists actively support Johnson education office programs with numerous talks and tours. Major examples are Mars geology and meteorite talks during lunar and research lab tours for Aerospace Scholars and the "Rocks from Space" talks for the Distance Learning Outpost. In addition, we actively participate in school visits, science fairs, and outreach targeted to girls and underrepresented minorities.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, Houston, TX 77058. E-mail: marilyn.lindstrom-1@nasa.gov. Phone: 281-483-5135.

Contact: Ms. Jaclyn Allen, Lockheed Martin Corporation, Houston, TX 77058. E-mail: jaclyn.s.allen1@jsc.nasa.gov. Phone: 281-483-7389.

Primary URL: <http://learningoutpost.jsc.nasa.gov>

2nd URL: <http://aerospacescholars.jsc.nasa.gov/index.cfm>

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Dr. Cady Coleman	NASA Johnson Space Center	Houston, TX
	Ms. Teresa Longazo	Hernandez Engineering, Inc.	Houston, TX
	Dr. David Mittlefehldt	NASA Johnson Space Center	Houston, TX
	Ms. Andrea Mosie	NASA Johnson Space Center	Houston, TX
	Dr. Faith Vilas	NASA Johnson Space Center	Houston, TX
	Ms. Linda Watts	Lockheed Martin Corporation	Houston, TX
	Dr. Michael Zolensky	NASA Johnson Space Center	Houston, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Dec 02	10 Dec 02	Sam Rayburn High School	Pasadena, TX	51	0	0

18 Dec 02	18 Dec 02	NASA Johnson Space Center	Houston, TX	155	0	0
09 Jan 03	09 Jan 03	NASA Johnson Space Center	Houston, TX	5	0	0
16 Jan 03	16 Jan 03	NASA Johnson Space Center	Houston, TX	155	0	0
05 Apr 03	05 Apr 03	Redd School	Houston, TX	0	40	0
15 Jun 03	10 Jul 03	University of Arizona	Tucson, AZ	45	0	0
23 Jun 03	23 Jun 03	NASA Johnson Space Center	Houston, TX	25	0	0
23 Jun 03	26 Jun 03	Texas Tech University	Lubbock, TX	11	0	0
30 Jun 03	30 Jun 03	NASA Johnson Space Center	Houston, TX	25	0	0
07 Jul 03	07 Jul 03	NASA Johnson Space Center	Houston, TX	25	0	0
14 Jul 03	14 Jul 03	NASA Johnson Space Center	Houston, TX	25	0	0
21 Jul 03	24 Jul 03	Texas Tech University	Lubbock, TX	14	0	0

A243. Astronomy for UW GEAR-UP Students

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: Groups of middle and high school students from all over the state of Washington were instructed and mentored through their participation in the Summer 2003 Institute for GEAR-UP students, a program designed to encourage underrepresented youths to consider attending college. Our activities introduced students to the exciting discoveries in the astronomical sciences through an interactive lecture at the University of Washington's campus planetarium with NASA pictures from HST and various solar system missions. Students also were introduced to scientific methods of discovery with hands-on activities from NASA's "Exploring Meteorite Mysteries" at the University of Washington's Department of Astronomy's facilities. Relevant NASA space science educational materials were distributed to the students.

Lead: Ms. Nancy Cooper, University of Washington, Seattle, WA 98195. E-mail: s2n2@u.washington.edu. Phone: 206-543-0214.

Contact: Mr. Bruce Wynn, University of Washington State GEAR-UP, Seattle, WA 98195-3765. E-mail: wynnb@u.washington.edu. Phone: 206-616-8157.

Primary URL: <http://gearup.washington.edu>

2nd URL: <http://www.hecb.wa.gov/collegeprep/gu/guindex.asp>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Jun 03	24 Jun 03	University of Washington	Seattle, WA	25	0	0
08 Jul 03	08 Jul 03	University of Washington	Seattle, WA	25	0	0
15 Jul 03	15 Jul 03	University of Washington	Seattle, WA	25	0	0
29 Jul 03	29 Jul 03	University of Washington	Seattle, WA	25	0	0
05 Aug 03	05 Aug 03	University of Washington	Seattle, WA	25	0	0

A244. "Breaking the Secret Code of Starlight"

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: "Breaking the Secret Code of Starlight" is designed to teach fifth graders from Memphis City Schools how astronomers use light to determine what stars are made of. The students use diffraction gratings to see the spectral patterns emitted by light from different gaseous elements in spectrum tubes, and draw the lines they see on a worksheet. Then they compare their drawings with an actual spectrum of an emission-line star. Conclusion: stars are made of hydrogen.

Lead: Dr. Joan Schmelz, University of Memphis, Memphis, TN 38152. E-mail: jschmelz@memphis.edu. Phone: 901-678-2419.

Primary URL: <http://www.people.memphis.edu/~jschmelz/starlight.htm>

Scientist(s): Dr. Joan Schmelz University of Memphis Memphis, TN

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jan 03	30 May 03	University of Memphis	Memphis, TN	512	0	0

A245. Career Day at Lowell Bayside Academy

Theme(s): SEU

Msn/Prgm: ACE[B98]

Description: In a lively 1-hour discussion, students had a classroom presentation with a focus on space, radiation, and the ACE mission. An ACE movie was shown, and a homemade cloud chamber was used to let the students see the tracks of radiation (some due to cosmic rays hitting the upper atmosphere).

Lead: Dr. Richard Mewaldt, California Institute of Technology, Pasadena, CA 91125. E-mail: rmewaldt@srl.caltech.edu. Phone: 626-395-6612.

Scientist(s): Mr. Walter Cook California Institute of Technology Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 May 03	30 May 03	Lowell Bayside Academy	Long Beach, CA	34	0	0

A246. Career Opportunities in Space Engineering and Space Science

Theme(s): SEC

Msn/Prgm: ACE[B98]

Description: High school students from the Ann Arbor area were invited to an open-door event at the Space Science Research Laboratory, where University of Michigan graduate and undergraduate students introduced their work with the MESSENGER FIPS instrument. This activity was followed by two talks relevant to the future of NASA. Congressman Joseph Knollenberg talked about the importance of youth to the fulfillment of NASA's mission. Dr. Richard Fisher from NASA talked about the Sun-Earth Connection theme.

Lead: Dr. Thomas Zurbuchen, University of Michigan, Ann Arbor, MI 48109. E-mail: thomasz@engin.umich.edu. Phone: 734-647-6835.

Scientist(s): Ms. Angela Richard University of Michigan Ann Arbor, MI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Apr 03	01 Apr 03	University of Michigan	Ann Arbor, MI	158	0	0

A247. Chandra Student Research at the Pisgah Astronomical Research Institute (PARI) Observatory

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: Under a Chandra Cycle 4 E/PO Grant, two programs for high school students involving the study of astronomical sources, hands-on use of the radio telescope at the PARI, and research using Chandra data were carried out. Ten students from the North Carolina School of Mathematics and Science participated in the first session, which was presented as a 2-week "mini-term" project. Students learned about radio and x-ray astronomy, prepared for using the PARI radio telescopes, and in the second week, stayed at PARI to conduct research. The second program involved eight students who had worked on research projects using Chandra data during the school year. These students spent a week at PARI preparing science reports to enter into the 2003 Siemens competition. In addition to the program lead, this second session was supported by two former students serving as teaching assistants.

Lead: Dr. Jonathan Keohane, North Carolina School of Science and Mathematics, Durham, NC 27715. E-mail: keo-hane@ncssm.edu. Phone: (919) 416-2766.

Primary URL: <http://courses.ncssm.edu/miniterm/SubPages/GeneralInformation.htm>

2nd URL: <http://www.siemens-foundation.org>

Scientist(s): Dr. Jonathan Keohane California Institute of Technology Pasadena, CA

Partner(s): Pisgah Astronomical Research Institute Rosman, NC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Mar 03	14 Mar 03	Pisgah Astronomical Research Institute	Rosman, NC	10	0	0
16 Jul 03	27 Jul 03	Pisgah Astronomical Research Institute	Rosman, NC	10	0	0

A248. Chandra X-Ray Center Presentations and Workshops for Students

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: Members of the Chandra X-Ray Center staff, scientists working with Chandra observations, and Chandra resource agents visited classrooms and other education-related settings to inform students about the Chandra mission and other NASA space science initiatives. They shared the latest exciting science results and talked about their own research interests. They also participated in the development of materials for museum/planetarium exhibits and educational programs for broadcast. They advised on and contributed to the development of informal education materials that incorporated information about the Chandra science and mission.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.

Primary URL: <http://chandra.harvard.edu>2nd URL: <http://science.nasa.gov>

Scientist(s):	Dr. Robert Cameron	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Laurence David	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Roseanne DiStefano	Tufts University	Medford, MA
	Dr. R. Hank Donnelly	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Jeremy Drake	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Guiseppina Fabbiano	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Margarita Karovska	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Jan Malle	Point Park College	Pittsburgh, PA
	Dr. Jeffrey McClintock	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Gary Meehan	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Stephen Murray	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Randall Smith	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Harvey Tananbaum	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Jan Vrtilek	Harvard University	Cambridge, MA
	Dr. Saku Vrtilek	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Bradley Wargelin	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Belinda Wilkes	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Donna Young	Tufts University	Medford, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Oct 02	06 Oct 02	St. James Episcopal Church	Groveland, MA	27	0	0
15 Oct 02	15 Oct 02	River Valley Charter School	Newburyport, MA	42	0	0
22 Oct 02	22 Oct 02	Florida A&M University	Tallahassee, FL	55	0	0
23 Oct 02	23 Oct 02	Park School	Brookline, MA	52	0	0
26 Oct 02	03 Nov 02	Arizona Alliance For Math, Science and Technology Education	Phoenix, AZ	75	0	0
27 Oct 02	27 Oct 02	Guilford Technical Community College	Jamestown, NC	52	0	0
29 Oct 02	29 Oct 02	Guilford Technical Community College	Jamestown, NC	97	0	0
30 Oct 02	30 Oct 02	Lexington High School	Lexington, MA	57	0	0
12 Nov 02	12 Nov 02	St. Herman of Alaska Parochial School	Allston, MA	24	0	0
13 Nov 02	13 Nov 02	Willis E. Thorpe School	Danvers, MA	67	0	0
20 Nov 02	20 Nov 02	Kingsland Grange Preparatory School	Shrewsbury, UK			
			United Kingdom	82	0	0
04 Dec 02	04 Dec 02	University of Massachusetts, Lowell	Lowell, MA	280	0	250
16 Dec 02	16 Dec 02	Penn Brook Elementary School	Georgetown, MA	156	0	0
03 Jan 03	03 Jan 03	Scott Elementary School	Evansville, IN	63	0	0
27 Jan 03	27 Jan 03	Penn Brook Elementary School	Georgetown, MA	156	0	0
03 Feb 03	03 Feb 03	Perley Elementary School	Georgetown, MA	156	0	0
01 Mar 03	01 Mar 03	Expanding Your Horizons in Math and Science	Pittsburgh, PA	60	0	0
05 Mar 03	05 Mar 03	St. Herman of Alaska Parochial School	Allston, MA	25	0	0

14 Mar 03	15 Mar 03	Harvard Foundation Science Conference: Advancing Minorities and Women in Science, Engineering, and Math	Cambridge, MA	195	0	0
19 Mar 03	19 Mar 03	Bishop School	Arlington, MA	25	0	0
20 Mar 03	20 Mar 03	Wellesley Community Children's Center	Wellesley, MA	72	0	0
02 Apr 03	02 Apr 03	Floral Street School	Shrewsbury, MA	52	0	0
02 Apr 03	02 Apr 03	Wilson Middle School	Natick, MA	158	0	0
30 Apr 03	30 Apr 03	Horace Mann School	Melrose, MA	54	0	0
10 May 03	10 May 03	Ohio State University	Columbus, OH	108	0	0
27 May 03	27 May 03	Wayland Middle School	Wayland, MA	94	0	0
12 Jun 03	12 Jun 03	Belmont Day School	Belmont, MA	37	0	0
13 Jul 03	18 Jul 03	Plymouth State University	Plymouth, NH	31	0	0
06 Aug 03	06 Aug 03	Camp Seafaring	Cambridge, MA	25	0	0
27 Aug 03	27 Aug 03	Russell Elementary School	Rumney, NH	57	0	0

A249. Chandra-Science After-School Initiative

Theme(s): SEU

Msn/Prgm: CX0[B65]

Description: The E/PO office of the MIT Center for Space Research partnered with the Boston 2:00-to-6:00 After-School Initiative, the Museum of Science, Boston, and six after-school programs to offer the Chandra-Science After-School Initiative to students in the Boston public schools. This is the first of a series of E/PO initiatives to provide inner-city youths with an opportunity to explore their interest in science in ways that are appealing and reinforce the learning that takes place during the school hours. The initiative consisted of nine sessions at the Museum of Science during the winter and spring semesters. At each session, students engaged in group activities, attended a dynamic presentation by an MIT scientist on Chandra and space science, followed by a question/answer session, and went on a tour of a museum exhibit related to the space science topic of the day.

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

Primary URL: <http://space.mit.edu/CSR/outreach>

Scientist(s):	Dr. Fred Baganoff	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Deepto Chakrabarty	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Amy Fredericks	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Bryan Gaensler	Harvard University	Cambridge, MA
	Dr. Sarah Gallagher	Massachusetts Institute of Technology	Cambridge, MA
	Dr. David Huenemoerder	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Julia Lee	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Sera Markoff	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Herman Marshall	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Thomas Pannuti	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Tania Ruiz	Museum of Science	Boston, MA
	Dr. Mike Stage	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Kevin Tibbetts	Massachusetts Institute of Technology	Cambridge, MA
Partner(s):	Museum of Science		Boston, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Museum of Science	Boston, MA	65	0	0
11 Oct 02	11 Oct 02	Museum of Science	Boston, MA	50	0	0
18 Oct 02	18 Oct 02	Museum of Science	Boston, MA	65	0	0
01 Nov 02	01 Nov 02	Museum of Science	Boston, MA	65	0	0
15 Nov 02	15 Nov 02	Museum of Science	Boston, MA	65	0	0
02 Dec 02	02 Dec 02	Museum of Science	Boston, MA	99	0	0
14 Mar 03	14 Mar 03	Museum of Science	Boston, MA	51	0	0
28 Mar 03	28 Mar 03	Museum of Science	Boston, MA	51	0	0
11 Apr 03	11 Apr 03	Museum of Science	Boston, MA	51	75	0

A250. CHIPS Classroom Visits and Student Support

Theme(s): SEU

Msn/Prgm: CHIPS[B72], FAST[B99]

Description: CHIPS scientists and E/PO personnel visited classrooms and other after-school groups to give talks on the CHIPS mission and its science. During these visits, the classes also participated in various educational activities.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.Primary URL: http://cse.ssl.berkeley.edu/chips_epo

Scientist(s):	Mr. Richelieu Hemphill	University of California, Berkeley	Berkeley, CA
	Dr. Mark Hurwitz	University of California, Berkeley	Berkeley, CA
	Dr. Will Marchant	University of California, Berkeley	Berkeley, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
	Mr. Barry Welsh	University of California, Berkeley	Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Nov 02	19 Nov 02	Longfellow Arts and Technology Middle School	Berkeley, CA	33	0	0
22 Nov 02	22 Nov 02	Hoover Elementary School	Oakland, CA	28	0	0
17 Dec 02	17 Dec 02	Analy High School	Sebastopol, CA	30	30	0
22 Jan 03	22 Jan 03	Washington Elementary School	Berkeley, CA	20	20	0
23 Jan 03	23 Jan 03	Franklin Elementary School	Burlingame, CA	20	20	0
27 Jan 03	27 Jan 03	Private Residence	San Pablo, CA	16	16	0
23 Apr 03	23 Apr 03	George Mason University	Fairfax, VA	45	45	0

A251. Classroom Presentations by Kepler Scientists and Engineers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Kepler[B24]

Description: NASA scientists and engineers visited K-12 classrooms, museums, and science centers to give inspiring and informative presentations related to their work on the Kepler mission.

Lead: Mr. Alan Gould, Lawrence Hall of Science, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.Primary URL: <http://www.lawrencehallofscience.org/kepler>

Scientist(s):	Dr. Riley Duren	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. David Koch	NASA Ames Research Center	Moffett Field, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
22 Jan 03	22 Jan 03	McKinley School	Pasadena, CA	72	0	0
14 Jun 03	14 Jun 03	Adler Planetarium and Astronomy Museum	Chicago, IL	205	0	0

A252. Compact Reconnaissance Imaging Spectrometer for Mars (CRISM): Student Support

Theme(s): SSE

Msn/Prgm: MRO[B45]

Description: The CRISM E/PO office helped scientists, engineers, and other team members become involved in E/PO efforts by providing opportunities for participation in student and public events. This office coordinated and hosted these events, and provided the resources necessary for the team members to talk to student participants, present demonstrations and tours, serve on panels, and have direct interaction with students regarding the Mars Reconnaissance Orbiter and the CRISM instrument which will be onboard.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.Contact: Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.Primary URL: <http://crism.jhuapl.edu>

2nd URL: <http://www.spaceacademy.jhuapl.edu>

Scientist(s): Mr. Mike Buckley Johns Hopkins Applied Physics Laboratory Laurel, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Jan 03	08 Jan 03	Fountain Green Elementary School	Bel Air, MD	124	0	0

A253. Deep Space Network (DSN) Educational Activities

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: DSN education activities cover a range of teacher and student activities in the classroom and other venues, from teacher training to student classroom lectures. In addition, an educational wallsheet was produced this year, including a section on careers and a math activity on the reverse side. Wallsheets were distributed at events not covered by a DSN representative, were sent in response to mail requests, and were provided to Solar System ambassadors, Solar System educators, and NASA Educator Resource Centers for wider distribution.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s):	Ms. Luanne Cathey	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. James Lesh	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Dorice Odell	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Byron Yetter	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Dec 02	05 Dec 02	Vena Avenue School	Pacoima, CA	22	0	0
13 Dec 02	13 Dec 02	Manchester Avenue School	Los Angeles, CA	94	0	0
01 Apr 03	01 Apr 03	University of California, Riverside	Riverside, CA	100	0	0
02 May 03	02 May 03	Reuben H. Fleet Science Center	San Diego, CA	69	40	0
01 Jun 03	01 Jun 03	International Planetarium Society	Los Angeles, CA	0	0	0
10 Jun 03	10 Jun 03	California State University, Long Beach	Long Beach, CA	30	0	0
10 Jun 03	10 Jun 03	Castaic Middle School	Castaic, CA	31	0	0
30 Jun 03	15 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
29 Aug 03	29 Aug 03	Harding County School	Buffalo, SD	62	0	0

A254. "Exploring the Extreme Universe!": Student Presentations

Theme(s): SEU

Msn/Prgm: GLAST[B68]

Description: This activity engages students by using classroom materials developed by the GLAST E/PO team to teach physical science and mathematics. It includes classroom demonstrations, lectures, and workshops for students on topics ranging from active galaxies to gamma-ray bursts, and the Structure and Evolution of the Universe (SEU). Also included are demonstrations of the effects of strong magnetic fields via the "Tesla Coil Show."

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynn@charmian.sonoma.edu. Phone: 707-664-2655.

Primary URL: <http://glast.sonoma.edu>

2nd URL: <http://scipp.ucsc.edu/outreach/teslacoil/teslacoil.html>

Scientist(s):	Dr. Neil Gehrels	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Tim Graves	Sonoma State University	Rohnert Park, CA
	Dr. James Martin	Stanford University	Stanford, CA
	Dr. Zachary Peckler	University of California, Santa Cruz	Santa Cruz, CA
	Dr. Hartmut Sadrozinski	University of California, Santa Cruz	Santa Cruz, CA
	Dr. Terry Schalk	University of California, Santa Cruz	Santa Cruz, CA
	Mr. Jason Smith	Challenger Center for Space Science Education	Alexandria, VA
Partner(s):	University of California, Santa Cruz		Santa Cruz, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Oct 02	07 Oct 02	University of California, Santa Cruz	Santa Cruz, CA	70	0	0
16 Oct 02	16 Oct 02	Mintie White Elementary School	Watsonville, CA	500	0	0
05 Nov 02	05 Nov 02	Aptos High School	Aptos, CA	120	0	0
13 Nov 02	13 Nov 02	Kennedy Middle School	Redwood City, CA	350	0	0
14 Nov 02	14 Nov 02	Capilano College	North Vancouver, Canada	75	0	0
19 Nov 02	19 Nov 02	Arthur Slade Catholic School	Glen Burnie, MD	50	0	0
25 Nov 02	25 Nov 02	Alouette Elementary School	Maple Ridge, BC, Canada	22	0	0
26 Nov 02	26 Nov 02	Arthur Slade Catholic School	Glen Burnie, MD	74	0	0
10 Dec 02	10 Dec 02	Spring Hill School	Santa Cruz, CA	70	0	0
17 Jan 03	17 Jan 03	Sherburne Elementary School	Killington, VT	41	0	0
13 Feb 03	13 Feb 03	St. Ignatius Preparatory High School	San Francisco, CA	120	0	0
24 Feb 03	28 Feb 03	San Diego School District	San Diego, CA	1,704	0	0
05 Mar 03	05 Mar 03	Tierra Linda Middle School	San Carlos, CA	240	0	0
08 Mar 03	08 Mar 03	University of California, Santa Cruz	Santa Cruz, CA	0	0	0
17 Mar 03	21 Mar 03	Marquette-Alger School District	Marquette, MI	677	0	0
01 Apr 03	01 Apr 03	Santa Teresa High School	San Jose, CA	140	0	0
28 Apr 03	28 Apr 03	Timm Ranch	Vacaville, CA	20	0	0
01 May 03	01 May 03	Terry Fox Secondary School	Port Coquitlam, Canada	25	0	0
05 May 03	09 May 03	Malaspina University-College	Nanaimo, Canada	18	0	0
10 May 03	10 May 03	Hilton Vancouver Metrotown	Burnaby, Canada	12	12	0
15 May 03	15 May 03	Pomfret Elementary School	Woodstock, VT	17	0	0
22 May 03	22 May 03	MESA Freedom High School	Oakley, CA	600	0	0
22 May 03	22 May 03	Santa Cruz Waldorf School	Santa Cruz, CA	6	0	0
01 Jun 03	01 Jun 03	Terry Fox Secondary School	Port Coquitlam, Canada	25	0	0
05 Jun 03	05 Jun 03	University of California, Santa Cruz	Santa Cruz, CA	100	0	0
09 Jul 03	09 Jul 03	University of California, Santa Cruz	Santa Cruz, CA	150	0	0
01 Sep 03	01 Sep 03	Terry Fox Secondary School	Port Coquitlam, Canada	63	0	0

A255. Exploring the Martian Surface with a Robotic Rover at the Sciencenter Computer Clubhouse

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: The Sciencenter, a hands-on science museum, and Jim Bell of Cornell University offer five workshops per year to children in grades 5-12. The participants build small robotic rovers that explore a simulated surface of the planet Mars. Digital cameras attached to the top of the rover are outfitted with color filters that can record images of a variety of objects. Children then use computer software to learn how light interacts with and "col-ors" objects, thus learning an important technique used by imaging scientists. The culmination of these children's workshops will be a viable lesson plan that combines math, science, and technology with the theme of telescopic and image exploration of the Solar System, which we will distribute through two middle and high school teacher workshops.

Lead: Dr. James Bell, Cornell University, Ithaca, NY 14853. E-mail: jfb8@cornell.edu. Phone: 607-255-5911.Contact: Dr. Catherine McCarthy, Sciencenter, Ithaca, NY 14850. E-mail: cmccarthy@sciencenter.org. Phone: 607-272-0600.Primary URL: <http://www.sciencenter.org>2nd URL: <http://www.sciencenter.org/cch>

Scientist(s): Dr. Jim Bell

Cornell University

Ithaca, NY

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jan 03	04 Apr 03	Sciencenter	Ithaca, NY	46	300	0

A256. Exploring the Solar System: Ryder Program

Theme(s): SEU, SSE

Msn/Prgm: LPI[B61]

Description: Each fall, the Lunar and Planetary Institute (LPI) hosts 10 sessions during which a local upper-elementary

class meets with LPI scientists to explore the Solar System through presentations, demonstrations, planetary data and images, and hands-on activities. Topics include an overview of scale (time and distance), the formation of the Solar System, the Moon, remote sensing, the inner and outer Solar System, Mars, planetary processes, and space exploration. The background information, activities, and resources are being prepared for dissemination through the Internet and will be incorporated into educator workshops in the future.

Contact: Dr. Stephanie Shipp, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: shipp@lpi.usra.edu.
Phone: 281-486-2109.

Primary URL: <http://www.lpi.usra.edu/education/ryder.html>

A257. FAST Classroom Visits and Student Support

Theme(s): SEC

Msn/Prgm: FAST[B99]

Description: Every year, FAST scientists visit K-12 classrooms around the country to talk about FAST science, what it is like to be a scientist, and to provide basic student support as a teacher's aid. FAST scientists also discuss what it is like to be a woman in science and the difficulties encountered along the way. Through these activities, we educate students about the aurora and auroral science, reach underserved students, provide support to teachers, and introduce students to NASA scientists.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu.
Phone: 510-643-7273.

Contact: Dr. Laura Peticolas, University of California, Berkeley, Berkeley, CA 94720. E-mail: laura@ssl.berkeley.edu.
Phone: 510-643-7273.

Primary URL: http://cse.ssl.berkeley.edu/fast_epo

2nd URL: <http://sprg.ssl.berkeley.edu/fast>

Scientist(s): Dr. Laura Peticolas University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Nov 02	11 Nov 02	North Pole High School	North Pole, AK	51	0	0
04 Feb 03	06 May 03	Monarch Academy	Oakland, CA	29	0	0

A258. "Galactic Cosmic Rays: High-Energy Matter from the Milky Way"

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: This talk was part of the Trans-Iron Galactic Element Recorder (TIGER) balloon mission E/PO program and was given to members of Students and Teachers as Researchers, a selected group of outstanding high school science students and teachers.

Lead: Dr. W. Robert Binns, Washington University, St. Louis, MO 63130-4899. E-mail: wrb@wuphys.wustl.edu. Phone: 314-935-6247.

Scientist(s): Dr. W. Robert Binns Washington University St. Louis, MO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Jun 03	25 Jun 03	University of Missouri, St. Louis	St. Louis, MO	50	0	0

A259. Galileo Classroom Visits

Theme(s): SSE

Msn/Prgm: Galileo[B38]

Description: This project consisted of classroom presentations on the science and engineering of Galileo and educational materials in support of the Galileo mission to Jupiter.

Lead: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shannon.mcconnell@jpl.nasa.gov. Phone: 818-393-5815.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	24 Oct 02	University of Utah	Salt Lake City, UT	0	150	0
24 Oct 02	24 Oct 02	University of Wisconsin Parkside	Racine, WI	400	100	0
07 Feb 03	07 Feb 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	75	0

23 Apr 03	23 Apr 03	Spring Hill Elementary School	Spring Hill, KS	60	0	0
09 May 03	09 May 03	Mesa Union Elementary School	Somis, CA	392	0	0

A260. Genesis Classroom/Student Presentations

Theme(s): SSE

Msn/Prgm: Genesis[B52]

Description: Mid-continent Research for Education and Learning (McREL) Genesis E/PO discussed the educational materials available to teachers, students, and parents through the Genesis mission. Following an overview of the mission, information was presented about the newly created "draft" Community Quest (after school) materials that the Challenge to Excellence School agreed to pilot test. After the presentation, audience members had the opportunity to ask questions and review materials. As a follow-up to the December presentation, McREL Genesis E/PO presented each of the activities from the "draft" Community Quest materials to after-school teachers and adult leaders. The target audience included the principal, teachers, adult leaders, and a student aide. Participants examined each of the activities in preparation for pilot testing conducted in the spring of 2003.

Contact: Ms. Jacinta Behne, Mid-Continent Research for Education and Learning, Aurora, CO 80014. E-mail: jbehne@mcrel.org. Phone: 303-632-5605.

Primary URL: <http://www.genesismission.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
17 Dec 02	17 Dec 02	Challenge to Excellence Charter School	Parker, CO	15	0	0
30 Jan 03	30 Jan 03	Challenge to Excellence Charter School	Parker, CO	10	0	0

A261. Goldstone Apple Valley Radio Telescope (GAVRT): Classroom Implementation and Special Projects

Theme(s): SSE

Msn/Prgm: Galileo[B38], MER[B42], DSMS[B59]

Description: Two special projects were made available for students already experienced in the GAVRT project. The Mars Exploration Program science team supported a series of radar astronomy experiments. Students remotely operated one of four antennas receiving faint radar echoes from the Martian surface, including the Gusev Crater landing site for the Mars Exploration Rover "Spirit." The radar echoes came from powerful radar signals, transmitted from the Deep Space Network antenna at Goldstone, California. The experiment investigated the surface properties of the planet. Curriculum to support this effort was developed by the Lewis Center for Educational Research. Students also were excited to have the opportunity to assist the Galileo science team at the end of mission when the spacecraft took a controlled plunge into Jupiter's atmosphere. Students took measurements of Jupiter's radiation belts before, during, and after the spacecraft's last days of flight that ended when Galileo disintegrated in Jupiter's atmosphere on September 21, 2003.

Lead: Dr. Michael Klein, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: michael.j.klein@jpl.nasa.gov. Phone: 818-354-7132.

Primary URL: <http://www.gavrt.org>

2nd URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s):	Dr. Scott Bolton	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Albert Haldeman	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Klein	NASA Jet Propulsion Laboratory	Pasadena, CA
Partner(s):	Lewis Center for Educational Research		Apple Valley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Aug 03	27 Sep 03	Meadowdale Middle School	Lynnwood, WA	141	0	0
18 Aug 03	21 Aug 03	Strong Vincent High School	Erie, PA	16	0	0
18 Aug 03	21 Sep 03	Northridge Magnet School	Moreno Valley, CA	42	0	0
21 Aug 03	21 Sep 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	16	0	0
21 Aug 03	21 Sep 03	Ballard Junior High School	Huxley, IA	99	0	0
15 Sep 03	20 Sep 03	Notre Dame Academy	Los Angeles, CA	21	0	0
15 Sep 03	20 Sep 03	Opelika Middle School	Opelika, AL	51	0	0
15 Sep 03	21 Sep 03	Montgomery Central High School	Cunningham, TN	19	0	0

A262. Goldstone Apple Valley Radio Telescope (GAVRT): Classroom Implementation

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: The GAVRT project brings real science into the classroom through radio astronomy. Students control a 34-meter radio telescope to observe and obtain data on planetary phenomena such as Jupiter's radiation belts, the atmosphere of Uranus, and the brightness variability of quasars. Data collected and analyzed by students are used by scientists at NASA's Jet Propulsion Laboratory and other institutions. The project is curriculum-based, meeting national and state science standards, and is available for grades 1-12.

Contact: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://www.gavrt.org>2nd URL: <http://deepspace.jpl.nasa.gov/dsn/applevalley>

Scientist(s): Dr. Michael Klein NASA Jet Propulsion Laboratory

Pasadena, CA

Partner(s): Lewis Center for Educational Research

Apple Valley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Nov 02	Cornerstone Christian School	Paway, CA	20	0	0
01 Oct 02	10 Nov 02	Partnership School for the Sciences	Orting, WA	27	0	0
02 Oct 02	04 Nov 02	Chula Vista High School	Chula Vista, CA	103	0	0
02 Oct 02	12 Nov 02	Strong Vincent High School	Erie, PA	32	0	0
02 Oct 02	04 Dec 02	Baker High School	Mobile, AL	51	0	0
04 Oct 02	08 Nov 02	Oak Mountain Middle School	Birmingham, AL	286	0	0
04 Oct 02	19 Nov 02	Brewton Middle School	Brewton, AL	42	0	0
09 Oct 02	16 Dec 02	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	1	0	0
14 Oct 02	31 Jan 03	Opelika Middle School	Opelika, AL	55	0	0
28 Oct 02	20 Apr 03	Meadowdale Middle School	Lynnwood, WA	131	0	0
04 Nov 02	05 Dec 02	Hohenfels American High School	Hohenfels, Germany	9	0	0
08 Nov 02	14 Jan 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	38	0	0
15 Jan 03	11 Mar 03	Littlerock High School	Littlerock, CA	63	0	0
15 Jan 03	09 May 03	Northridge Magnet School	Moreno Valley, CA	136	0	0
20 Feb 03	20 Mar 03	Redlands Senior High School	Redlands, CA	7	0	0
05 Mar 03	21 May 03	Hinkley Middle School	Hinkley, CA	13	0	0
06 Mar 03	23 May 03	King's Way Christian School	Vancouver, WA	19	0	0
26 Mar 03	11 Apr 03	Notre Dame Academy	Los Angeles, CA	23	0	0
31 Mar 03	21 Apr 03	Redlands East Valley High School	Redlands, CA	9	0	0
01 Apr 03	28 Apr 03	Roland Park Country School	Baltimore, MD	68	0	0
01 Apr 03	02 May 03	Burlington High School	Des Lacs, ND	66	0	0
14 Apr 03	06 May 03	Taegu American School	Taegu, South Korea	26	0	0
15 Apr 03	07 Jun 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	120	0	0
22 Apr 03	22 Apr 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	90	0	0
28 Apr 03	16 May 03	Ballard Junior High School	Huxley, IA	27	0	0
28 Apr 03	19 May 03	St. Mary's School	Medford, OR	32	0	0
28 Apr 03	23 May 03	Ramona Middle School	LaVerne, CA	454	0	0
01 May 03	29 May 03	Oxford High School	Oxford, MI	55	0	0
01 May 03	30 May 03	Columbus High School	Columbus, GA	9	0	0
16 Jun 03	25 Jul 03	Ballard Junior High School	Huxley, IA	14	0	0
25 Aug 03	16 Sep 03	Chaffin Junior High School	Fort Smith, AR	106	0	0
25 Aug 03	18 Sep 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	26	0	0
10 Sep 03	18 Sep 03	Academy for Academic Excellence/Lewis Center for Educational Research				

A263. Goldstone Apple Valley Radio Telescope (GAVRT): Scientist Telecons

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: Teachers in the GAVRT project can schedule teleconferences for their students to talk directly to NASA's Jet Propulsion Laboratory scientists about the program or about science in general.

Lead: Dr. Steven Levin, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: steven.m.levin@jpl.nasa.gov. Phone: 818-354-1917.Primary URL: <http://deepspace.jpl.nasa.gov/dsn/applevalley>2nd URL: <http://www.gavrt.org>

Scientist(s):	Dr. Varoujan Gorjian	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Mark Hofstadter	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Klein	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Steven Levin	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Timothy Thompson	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Nov 02	18 Nov 02	Burlington High School	Des Lacs, ND	27	0	0
04 Dec 02	04 Dec 02	Partnership School for the Sciences	Orting, WA	28	0	0
11 Dec 02	11 Dec 02	Chula Vista High School	Chula Vista, CA	31	0	0
18 Dec 02	18 Dec 02	Meadowdale Middle School	Lynnwood, WA	36	0	0
15 Jan 03	15 Jan 03	Brewton Middle School	Brewton, AL	16	0	0
22 Jan 03	22 Jan 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	21	0	0
29 Jan 03	29 Jan 03	Notre Dame Academy	Los Angeles, CA	56	0	0
05 Feb 03	05 Feb 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	13	0	0
26 Feb 03	26 Feb 03	Opelika Middle School	Opelika, AL	30	0	0
05 Mar 03	05 Mar 03	Academy for Academic Excellence/Lewis Center for Educational Research	Apple Valley, CA	13	0	0
12 Mar 03	12 Mar 03	Hinkley Middle School	Hinkley, CA	16	0	0
19 Mar 03	19 Mar 03	Chula Vista High School	Chula Vista, CA	31	0	0
09 Apr 03	09 Apr 03	Northridge Magnet School	Moreno Valley, CA	28	0	0
16 Apr 03	16 Apr 03	Meadowdale Middle School	Lynnwood, WA	121	0	0
23 Apr 03	23 Apr 03	Redlands East Valley High School	Redlands, CA	6	0	0
30 Apr 03	30 Apr 03	St. Mary's School	Bordentown, NJ	1	0	0
07 May 03	07 May 03	Burlington High School	Des Lacs, ND	26	0	0
14 May 03	14 May 03	Ballard Junior High School	Huxley, IA	51	0	0
21 May 03	21 May 03	Northridge Magnet School	Moreno Valley, CA	33	0	0
28 May 03	28 May 03	King's Way Christian School	Vancouver, WA	20	0	0

A264. Goldstone Apple Valley Radio Telescope (GAVRT): Scientist School Visits

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: When NASA's Jet Propulsion Laboratory scientists involved in the GAVRT project are attending professional meetings or conferences in areas where GAVRT schools are located, an effort is made to arrange for the scientist to visit the school to speak directly with the students. This is an extension of the Scientist Telecon program within GAVRT and provides an opportunity for students to meet the scientists and interact with them.

Contact: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Scientist(s):	Dr. Heidi Hammel	Space Science Institute	Boulder, CO
	Dr. Mark Hofstadter	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Klein	NASA Jet Propulsion Laboratory	Pasadena, CA
Partner(s):	Lewis Center for Educational Research		Apple Valley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Jan 03	07 Jan 03	Meadowdale Middle School	Lynnwood, WA	127	0	0
08 Jan 03	08 Jan 03	Orting Middle School	Orting, WA	603	0	0
08 Jan 03	08 Jan 03	Orting Partnership School for the Sciences	Orting, WA	28	0	0

A265. Goldstone Communications Complex: Educational Activities

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: The outreach team at Goldstone is occasionally able to go into the classrooms of schools in the Barstow area to talk about the Deep Space Network and the tours offered by the Goldstone site. In addition, similar talks are given to teachers during professional development sessions in the Barstow school district and surrounding communities.

Contact: Ms. Marie Massey, Goldstone Deep Space Communications Complex, Fort Irwin, CA 92310. E-mail: Marie.massey@csconline.com. Phone: 760-255-8687.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s): Ms. Marie Massey Goldstone Deep Space Communications Complex Fort Irwin, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
22 Oct 02	22 Oct 02	Barstow High School	Barstow, CA	80	0	0
03 Dec 02	03 Dec 02	Barstow High School	Barstow, CA	362	0	0
26 Feb 03	26 Feb 03	Hinkley Middle School	Hinkley, CA	42	0	0
30 Apr 03	30 Apr 03	Barstow College	Barstow, CA	300	0	0
23 Jul 03	24 Jul 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	92	0	0

A266. Goldstone Communications Complex: Student Tours

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: Student tours of Goldstone, NASA's Deep Space Network (DSN) site in California's Mojave Desert, include visits to three or four of the huge antennas that track spacecraft exploring our Solar System. Students go inside the pedestal of the 70-meter antenna and spend time in the museum where they are shown videos and see models and displays of missions currently being tracked, as well as historic missions that are communicated through the DSN. Since Goldstone is a large complex in the desert, students are given an explanation of the desert environment and local wildlife.

Lead: Ms. Marie Massey, Goldstone Deep Space Communications Complex, Fort Irwin, CA 92310. E-mail: Marie.massey@csconline.com. Phone: 760-255-8687.

Primary URL: <http://gts.gdscc.nasa.gov>2nd URL: <http://deepspace.jpl.nasa.gov/dsn/educ/index.html>

Scientist(s): Ms. Marie Massey Goldstone Deep Space Communications Complex Fort Irwin, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	31 Oct 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	41	0	0
01 Nov 02	30 Nov 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	12	0	0
01 Dec 02	31 Dec 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	44	0	0
02 Jan 03	31 Jan 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	148	0	0
01 Feb 03	28 Feb 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	267	0	0
01 Mar 03	31 Mar 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	114	0	0

01 Apr 03	30 Apr 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	55	0	0
01 May 03	31 May 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	197	0	0
01 Jun 03	30 Jun 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	9	7	0
01 Jul 03	31 Jul 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	30	0	0
01 Aug 03	31 Aug 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	22	0	0
02 Sep 03	30 Sep 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	41	0	0

A267. IDEAS Grant: Incorporation of Scientific Ballooning in Science Education

Theme(s): ASO

Msn/Prgm: IDEAS[B1]

Description: The program will take advantage of the proximity of a NASA scientific balloon base in an effort to augment the science curriculum of the Roswell Public School District. NASA's launch site for large scientific balloons is Fort Sumner, a small village located in a rural section of eastern New Mexico. While this location is well known to experimenters, people in the surrounding area know little of its existence or purpose. The basic science related to balloon experimentation could be incorporated into the K-12 science curriculum to include such topics as the properties of the atmosphere, weather, and communications. The culmination of the project will be the construction of a balloon-borne instrument to be launched either as a piggyback experiment on a larger payload or on a small radio sound balloon.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s): Dr. Steve Stochaj New Mexico State University, Las Cruces Las Cruces, NM

Partner(s): New Mexico State University, Las Cruces Las Cruces, NM
Roswell Independent School District Roswell, NM

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 May 99	30 Sep 01	Roswell Independent School District	Roswell, NM	315	0	0
01 May 99	30 Sep 01	Roswell Independent School District	Roswell, NM	30	0	0

A268. IDEAS Grant: "Rocket into the Aurora"—A Webcast in Observing Auroral Activity

Theme(s): ASO

Msn/Prgm: IDEAS[B1]

Description: The program focused on developing an innovative interdisciplinary educational webcast of a February 2000 NASA sounding rocket campaign. The goals included involving students, teachers, and the public as "auroral explorers" as they examine and assess both space and ground-based instrument data surrounding the rocket launch. Auroras have been witnessed for thousands of years and were the first hint that the Earth's upper atmosphere and ionosphere were tied to a larger near-Earth space environment. The advent of the space age revolutionized our view of auroral arc creation through the solar wind interaction with the Earth's magnetic field that creates large-scale geomagnetic substorms and massive space and ionosphere currents. By combining auroral educational materials currently under development with near-real-time camera, magnetometer, and satellite data, the auroral studies Web site participants will become space weather observers alongside scientists as they attempt to launch the rocket into an auroral substorm. Along with daily, updated Web-based auroral observations, there will be public outreach and educational materials associated with all aspects of the auroral and sounding rocket campaign, as well as online discussions about the space-weather predictions. After the successful rocket launch, there will be a downloadable Web-based educational packet distributed through NASA and science education organizations.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Primary URL: <http://www.ssoar.org/polarcusp>

Scientist(s): Dr. Gregory Delory University of California, Berkeley Berkeley, CA

Partner(s): Glenbrook North High School Northbrook, IL

University of California, Berkeley
University of Michigan

Berkeley, CA
Ann Arbor, MI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Jan 00	01 Feb 03	University of California, Berkeley	Berkeley, CA	0	129	0

A269. IDEAS Grant: "Students Teaching Students"—High School Students as Astronomy Teachers

Theme(s): ASO, SEC, SSE

Msn/Prgm: IDEAS[B1]

Description: The goals of this project are to use the universal appeal of astronomy to (1) increase science literacy and knowledge about astronomy among K–12 students, (2) increase high school students' workplace competencies, and (3) increase awareness of and promote careers in science and science education. The plan calls for the formation of three teams, each consisting of a professional astronomer and a professional educator, who will work intensively with two high school classes and their science teacher for 12 weeks. Once students have a basic knowledge of astronomy, they will be able to expand and reinforce it by teaching others. This will promote science literacy at both the older and younger students' levels. Up to 20 high school students will be selected to continue into the next phase: a 15-week period where they will be mentored and work with an astronomer, an astronomy educator, their science teacher, and three K-8 teachers to first prepare, and then teach, four hands-on astronomy lessons to K-8 students. The lessons will come from an established curriculum. Two lessons will involve a STARLAB portable planetarium. The high school students will meet once a week for four weeks with the younger students and participate in an astronomy evening for the whole school. To multiply the impact of the program, the College will identify internships for these high school students which include STARLAB presentations at summer day camps; internships at local planetariums; space camp or 4-H fair; setting up an astronomy resource center; or completing a small research project.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Scientist(s):	Dr. Wil van der Veen	Columbia University	New York, NY
Partner(s):	Columbia University		New York, NY
	High Bridge Elementary School		High Bridge, NY
	New Jersey Astronomical Association		High Bridge, NJ
	New Jersey Institute of Technology		Newark, NJ
	Raritan Valley Community College		Somerville, NJ
	Rutgers Cooperative Extension of Somerset County 4-H		Bridgewater, NJ
	Rutgers University		Piscataway, NJ
	Valley View Elementary School		Califon, NJ
	Vorhees High School		Glen Gardener, NJ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Mar 00	31 Aug 02	Raritan Valley Community College	Somerville, NJ	0	1,212	0

A270. IMAGE Presentations to Students

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: IMAGE[B100]

Description: Dr. Sten Odenwald discussed the formation of the Solar System, the evolution of the Sun, and solar-terrestrial interactions with classrooms of all grade levels. A question-and-answer period followed each presentation, where students asked about space science topics (e.g. black holes, cosmology) and careers in astronomy.

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.

Scientist(s): Dr. Sten Odenwald NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 Oct 02	29 Oct 02	Cherry Hill Middle School	Elkton, MD	141	0	0
16 Jan 03	16 Jan 03	Sligo Creek Elementary School	Silver Spring, MD	59	0	0
12 Feb 03	12 Feb 03	Holy Redeemer School	Kensington, MD	67	0	0

11 Mar 03	11 Mar 03	Roberto Clemente Middle School	Germantown, MD	137	0	0
04 Apr 03	04 Apr 03	Roberto Clemente Middle School	Germantown, MD	130	0	0

A271. "Imagine Mars!"

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: The "Imagine Mars!" program is a national science, art, and technology education initiative that challenges students to design a community on Mars that would be scientifically sound and offer a high quality of life. The project draws on the former Mars Millennium Program. An integration of science, mathematics, and technology with the arts and humanities, it opens a door into science and technology for students who are more humanities inclined and would otherwise not be as exposed to the excitement of scientific discovery. Activities are based on arts and humanities standards as well as science education standards. Scientists, engineers, artists, architects, and other community members serve as role models.

Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: mviotti@pop.jpl.nasa.gov. Phone: 818-354-8774.

Primary URL: <http://ImagineMars.jpl.nasa.gov>

Scientist(s):	Mr. John Beck	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Susan Hoban	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Scott Hulme	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Christine Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Bob Mase	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Bill Nye	Cornell University	Ithaca, NY
	Mr. Rino Passaniti	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Tracy Williams	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Peter Xaypraseuth	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
13 Dec 02	13 Dec 02	NASA Jet Propulsion Laboratory	Pasadena, CA	102	3225	0
07 Jan 03	30 May 03	R. K. Mellon Elementary School	Ligonier, PA	413	0	0

A272. Imaging Neptune

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: Imaging Neptune focuses on the recent telescope observations of Neptune that have revealed a significant increase in brightness over the years. The theme of "Springtime on Neptune" is exploited with colored images to capture the imaginations of the various formal and informal education audiences. Educational activities are developed in partnership with the University of Wisconsin (UW)-Madison Office of Space Science Education (OSSE), which supports E/PO programs that have been developed in collaboration with on-campus space science researchers. NASA-funded scientists from the Space Science and Engineering Center, Space Astronomy Laboratory, and the Departments of Astronomy and Physics partner with OSSE staff to develop and participate in a broad spectrum of formal and informal space science education programs that are based on an OSSE philosophy that emphasizes current content and solid pedagogy. Activities include professional development workshops and inservices for teachers, K-12 curriculum mapping for state school districts, school visits and presentations, space science education summer sessions that target the unique learning needs of the state's minority and low-income students, public lectures, special topical presentations at local observatories and planetariums, and innovative distance-learning programs that feature UW-Madison NASA-supported research.

Lead: Dr. Lawrence Sromovsky, University of Wisconsin-Madison, Madison, WI 53715. E-mail: lsromovsky@ssec.wisc.edu. Phone: 608-263-6785.

Contact: Dr. Sanjay Limaye, University of Wisconsin-Madison, Madison, WI 53715. E-mail: sanjayl@ssec.wisc.edu. Phone: 608-262-9541.

Scientist(s):	Dr. Sanjay Limaye, University of Wisconsin-Madison, Madison, WI	
	Dr. Rosalyn Pertzborn	NASA Office of Space Science
		Washington, DC
Dr. Lawrence Sromovsky, University of Wisconsin-Madison, Madison, WI		

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Nov 02	04 Nov 02	University of Wisconsin-Madison	Madison, WI	23	0	0
18 Nov 02	18 Nov 02	Washington Elementary School	Neenah, WI	106	5	0
08 Feb 03	08 Feb 03	University of Wisconsin-Madison	Madison, WI	17	0	0
24 Feb 03	24 Feb 03	University of Wisconsin-Madison	Madison, WI	15	0	0
23 Jun 03	27 Jun 03	University of Wisconsin-Madison	Madison, WI	15	0	0

A273. "Life as a Space Scientist"

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: Dr. George Hospodarsky from the University of Iowa participated in career day discussions with elementary and middle school students. The talk focused on what space physicists do and what schooling they require. In addition, students had an opportunity to learn about a number of NASA missions, including Cassini, Mars Express, and Polar.

Lead: Dr. George Hospodarsky, University of Iowa, Iowa City, IA 52242. E-mail: george-hospodarsky@uiowa.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Apr 03	30 Apr 03	Van Buren Elementary School	Cedar Rapids, IA	126	0	0
28 May 03	28 May 03	Northwest Junior High School	Coralville, IA	126	0	0

A274. "Live from the Aurora" and "Auroras: Living With a Star"

Theme(s): SEC, SSE

Msn/Prgm: P2K[B9], Ulysses[B89], Voyager[B90], STP[B91], STEREO[B96], TIMED[B97], ACE[B98], FAST[B99], IMAGE[B100], IMP-8[B101], RHESSI[B102], SAMPEX[B103], TRACE[B106], Cluster II[B108], Geotail[B109], Polar[B110], Wind[B111], SOHO[B112], LWS[B114], Yohkoh[B117]

Description: "Live from the Aurora" (LFAurora) uses video, Web resources, and hands-on activities to convey the beauty and mystery of the aurora and inform and excite students about Sun-Earth Connections and the relatively new discipline of space weather. LFAurora was a major broadcast component of NASA's 2003 Sun-Earth Days, as well as one of two hour-long programs created by P2K. The second documentary, "Auroras: Living With a Star", used comments from Alaskan Natives, a modern dance performance, and the most current science of the aurora to introduce the Sun-Earth Connection. Original animation, created by NASA Goddard Space Flight Center, showed how physics and chemistry determine the shape and colors of the aurora. The videos, broadcast nationally on participating PBS stations and NASA-TV, were accompanied by extensive Web-based activities and online resources developed by the SEC Forum. The programs premiered in February and March, 2003 and included scenes of NASA Sun-Earth scientists working close to Earth's North Magnetic Pole; sounding rocket research by NASA Wallops Flight Facility in Svalbard, Norway; spectacular animations of Sun-Earth events; and interviews with Ramon Lopez from the University of Texas at El Paso and Jeff Hughes, Nicola Fox, and Ernie Hildner from NOAA. LFAurora featured real-time footage of the aurora uplinked from Poker Flat Research Range, near Fairbanks, AK, direct to four science centers across the United States (Fernbank, Atlanta, GA; The Imaginarium, Anchorage, AK; Maryland Science Center; and the Chabot Space and Science Center, Oakland, CA) where youngsters and families stayed up late to witness the event. NASA Chief Scientist and astronaut, Shannon Lucid, described the aurora as seen from space. Sounding rockets scientists from the University of Alaska, Fairbanks, and Clemson, SC, discussed their work and responded in real time to questions from youngsters at the remote sites.

Lead: Mr. Geoffrey Haines-Stiles, Geoff Haines-Stiles Productions, Inc., Morristown, NJ 07960. E-mail: ghs@passportknowledge.com. Phone: 973-656-9403.

Primary URL: <http://passportknowledge.com/sun>

2nd URL: <http://passportknowledge.com>

Scientist(s):	Dr. Syun-Ichi Akasofu	International Artic Research Center	Fairbanks, AK
	Dr. Robin Barnes	Johns Hopkins University	Baltimore, M
	Dr. Gibor Basri	University of California, Berkeley	Berkeley, CA
	Dr. Paul (Major) Bellaire	U.S. Air Force	Washington, DC
	Dr. Tom Bridgman	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Neal Brown	University of Alaska, Fairbanks	Fairbanks, AK

Mr. Michael Carlowicz	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Franklin Chang-Diaz	NASA Johnson Space Center	Houston, TX
Dr. Mark Conde	University of Alaska, Fairbanks	Fairbanks, AK
Mr. Tom Connolly	NASA Wallops Flight Facility	Wallops Island, VA
Mr. Walt Costello	NASA Wallops Flight Facility	Wallops Island, VA
Dr. Chuck Deehr	University of Alaska, Fairbanks	Fairbanks, AK
Dr. Walt Feimer	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Bernard Fleck	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Tracy Gibb	NASA Wallops Flight Facility	Wallops Island, VA
Dr. Barbara Giles	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Michael Golightly	NASA Johnson Space Center	Houston, TX
Dr. Charles Goodrich	University of Maryland	College Park, MD
Dr. James Green	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
Dr. Michael Hesse	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Ernie Hildner	National Oceanic and Atmospheric Administration	Boulder, CO
Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Robert Hoffman	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Jeff Hughes	Boston University	Boston, MA
Dr. Marsha Ivins	NASA Johnson Space Center	Houston, TX
Dr. David Johnson	U.S. Air Force	Washington, DC
Dr. Ramona Kessel	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. James Labelle	Dartmouth College	Hanover, NH
Dr. Miguel Larsen	Clemson University	Clemson, SC
Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Ramon Lopez	University of Texas at El Paso	El Paso, TX
Dr. Shannon Lucid	NASA Headquarters	Washington, DC
Dr. Dirk Lummerzheim	University of Alaska, Fairbanks	Fairbanks, AK
Mr. Ray Martinez	University of Alaska, Fairbanks	Fairbanks, AK
Dr. Donald Michels	Naval Research Laboratory	Washington, DC
Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Daniel Osborne	University of Alaska, Fairbanks	Fairbanks, AK
Dr. Larry Paxton	Johns Hopkins University	Baltimore, MD
Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
Dr. Robert Pfaff	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Patricia Reiff	Rice University	Houston, TX
Ms. Kathe Rich	University of Alaska, Fairbanks	Fairbanks, AK
Mr. Bruce Scott	NASA Wallops Flight Facility	Wallops Island, VA
Dr. John Sigwarth	University of Iowa,	Iowa City, IA
Dr. Penny Slocum	The Aerospace Corporation	Arlington, VA
Mr. Jack Smith	NASA Wallops Flight Facility	Wallops Island, VA
Dr. Roger Smith	University of Alaska, Fairbanks	Fairbanks, AK
Dr. William Taylor	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Kent Tobiska	Space Environment Technologies	Los Angeles, CA
Dr. Richard Vondrak	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Gregory Walker	University of Alaska, Fairbanks	Fairbanks, AK
Dr. Michael Wiltberger	Dartmouth College	Hanover, NH
Dr. Thomas Zurbuchen	University of Michigan	Ann Arbor, MI
Partner(s): Air Force Research Laboratory		Hanscom Air Force Base, MA
		Anchorage, AK
		Anchorage, AK
		Fairbanks, AK
		Washington, DC
Alaska Native Heritage Center		
Alaska Pacific University		
Alaska Space Grant Consortium		
American Geophysical Union		

American Institute of Physics	College Park, MD
Arcetri Astrophysical Observatory	Florence, Italy
Carnegie Institution of Washington	Washington, DC
Chabot Space and Science Center	Oakland, CA
Clemson University	Clemson, SC
Dartmouth College	Hanover, NH
European Southern Observatory	Santiago, Chile
European Space Agency	Paris, France
European Space Agency Research and Technology Centre	Noorwick, Netherlands
Fermi National Accelerator Laboratory	Batavia, IL
Fernbank Science Center	Atlanta, GA
Harvard University	Cambridge, MA
Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
Imaginarium Science Discovery Center	Anchorage, AK
Johns Hopkins Applied Physics Laboratory	Laurel, MD
Johns Hopkins University	Baltimore, MD
Lawrence Berkeley National Laboratory	Berkeley, CA
Lawrence Livermore National Laboratory	Livermore, CA
Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA
Los Alamos National Laboratory	Los Alamos, NM
Maryland Science Center	Baltimore, MD
NASA Ames Research Center	Moffett Field, CA
NASA Goddard Space Flight Center	Greenbelt, MD
NASA Jet Propulsion Laboratory	Pasadena, CA
NASA Johnson Space Center	Houston, TX
NASA Langley Research Center	Hampton, VA
NASA Office of Biological and Physical Research	Washington, DC
NASA Office of Public Affairs	Washington, DC
NASA Office of Space Flight	Washington, DC
NASA Office of Space Science	Washington, DC
NASA Wallops Flight Facility	Wallops Island, VA
National Center for Atmospheric Research	Boulder, CO
National Oceanic and Atmospheric Administration	Boulder, CO
National Science Foundation	Arlington, VA
National Solar Observatory	Sunspot, NM
Naval Research Laboratory	Washington, DC
Peary-MacMillan Arctic Museum	Brunswick, ME
Smithsonian Institution	Washington, DC
Space Environment Technologies	Los Angeles, CA
Space Telescope Science Institute	Baltimore, MD
University Corporation for Atmospheric Research	Boulder, CO
University of Alaska, Fairbanks	Fairbanks, AK
University of Michigan	Ann Arbor, MI

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 May 03	Arizona Educational Television	Tempe, AZ	0	0	0
01 Oct 02	30 May 03	Board of Cooperative Educational Services	West Seneca, NY	0	0	0
01 Oct 02	30 May 03	Cable News Channel 8	Springfield, VA	0	0	0
01 Oct 02	30 May 03	Connecticut Public Television	Hartford, CT	0	0	0
01 Oct 02	30 May 03	Georgia Public Broadcasting	Atlanta, GA	0	0	0
01 Oct 02	30 May 03	Idaho Public Television	Boise, ID	0	0	0
01 Oct 02	30 May 03	KAET-TV, Channel 8/Phoenix	Tempe, AZ	0	0	0
01 Oct 02	30 May 03	KAFT-TV, Channel 13/Fayetteville	Conway, AR	0	0	0
01 Oct 02	30 May 03	KBIN-TV, Channel 32/Council Bluffs	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KCPT-TV, Channel 19/ Kansas City	Kansas City, MO	0	0	0
01 Oct 02	30 May 03	KCTS Public Television, Channel 9/Seattle	Seattle, WA	0	0	0

01 Oct 02	30 May 03	KDIN-TV, Channel 11/Des Moines	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KEET-TV, Channel 13/Eureka	Eureka, CA	0	0	0
01 Oct 02	30 May 03	KEMV-TV, Channel 6/Mountain View	Conway, AR	0	0	0
01 Oct 02	30 May 03	Kentucky Authority for Educational TV	Lexington, KY	0	0	0
01 Oct 02	30 May 03	KERA-TV, Channel 13/Dallas-Fort Worth	Dallas, TX	0	0	0
01 Oct 02	30 May 03	KETA-TV, Channel 13/Oklahoma City	Oklahoma City, OK	0	0	0
01 Oct 02	30 May 03	KETC-TV, Channel 9/ St. Louis	St. Louis, MO	0	0	0
01 Oct 02	30 May 03	KETJ-TV, Channel 19/Jonesville	Conway, AR	0	0	0
01 Oct 02	30 May 03	KETS-TV, Channel 2/Little Rock	Conway, AR	0	0	0
01 Oct 02	30 May 03	KHIN-TV, Channel 36/Red Oak	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KIIN-TV, Channel 12/Iowa City	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KIMT-TV, Channel 3	Mason City, IA	0	0	0
01 Oct 02	30 May 03	KLCS-TV, Channel 58/Los Angeles	Los Angeles, CA	0	0	0
01 Oct 02	30 May 03	KLPA-TV, Channel 25/Alexandria	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	KLPB-TV, Channel 24/Lafayette	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	KLRN, Alama Public Telecommunications	San Antonio, TX	0	0	0
01 Oct 02	30 May 03	KLRU-TV, Channel 18/Austin	San Antonio, TX	0	0	0
01 Oct 02	30 May 03	KLTL-TV, Channel 18/Lake Charles	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	KLTM-TV, Channel 13/Monroe	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	KLTS-TV, Chanel 24/Shreveport	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	KMOS-TV, Channel 6/Sedalia	Warrensburg, MO	0	0	0
01 Oct 02	30 May 03	KNME-TV, Channel 5/Albuquerque	Albuquerque, NM	0	0	0
01 Oct 02	30 May 03	KOCE-TV, Channel 50/Huntington Beach	Huntington Beach, CA	0	0	0
01 Oct 02	30 May 03	KOED-TV, Channel 11/Tulsa	Oklahoma City, OK	0	0	0
01 Oct 02	30 May 03	KOET-TV, Channel 3/Eufaula	Oklahoma City, OK	0	0	0
01 Oct 02	30 May 03	KOZJ-TV, Channel 26/Joplin	Springfield, MO	0	0	0
01 Oct 02	30 May 03	KQED-TV, Channel 9/San Francisco	San Francisco, CA	0	0	0
01 Oct 02	30 May 03	KRIN-TV, Chanel 32/Waterloo	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KRMA-TV, Channel 6/Denver	Denver, CO	0	0	0
01 Oct 02	30 May 03	KRSC-TV, Channel 35/Claremore	Claremore, OK	0	0	0
01 Oct 02	30 May 03	KSIN-TV, Channel 27/Sioux City	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KTEP Radio, 88.5 FM/El Paso	El Paso, TX	0	0	0
01 Oct 02	30 May 03	KTIN-TV, Channel 21/Fort Dodge	Johnston, IA	0	0	0
01 Oct 02	30 May 03	KTLC-TV, Channel 43/Oklahoma City	Oklahoma City, OK	0	0	0
01 Oct 02	30 May 03	KUAS-TV, Channel 27/Tucson	Tucson, AZ	0	0	0
01 Oct 02	30 May 03	KUAT-TV, Channel 6/Tucson	Tucson, AZ	0	0	0
01 Oct 02	30 May 03	KWET-TV, Channel 12/Cheyenne	Oklahoma City, OK	0	0	0
01 Oct 02	30 May 03	KYIN-TV, Channel 24/Mason City	Johnston, IA	0	0	0
01 Oct 02	30 May 03	Louisiana Educational Television Authority	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	Maryland Public Television	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	Missouri School Boards Association	Columbia, MO	0	0	0
01 Oct 02	30 May 03	Montana Public Television	Bozeman, MT	0	0	0
01 Oct 02	30 May 03	NASA-TV	Washington, DC	0	0	0
01 Oct 02	30 May 03	New Jersey Network	Trenton, NJ	0	0	0
01 Oct 02	30 May 03	Ohio Educational Telecommunications Association	Cincinnati, OH	0	0	0
01 Oct 02	30 May 03	Prairie Public Television	Fargo, ND	0	0	0
01 Oct 02	30 May 03	Public Broadcasting Atlanta	Atlanta, GA	0	0	0
01 Oct 02	30 May 03	Public Broadcasting Service	Alexandria, VA	0	6,960,000	150,000
01 Oct 02	30 May 03	Safety-Net	Austin, TX	0	0	0
01 Oct 02	30 May 03	South Carolina Educational Television	Columbia, SC	0	0	0
01 Oct 02	30 May 03	Tennessee Public Television Council	Martin, TN	0	0	0
01 Oct 02	30 May 03	Vermont Public Television	Colchester, VT	0	0	0
01 Oct 02	30 May 03	Virginia Educational Satellite Network	Richmond, VA	0	0	0
01 Oct 02	30 May 03	Virginia Public Television	Richmond, VA	0	0	0
01 Oct 02	30 May 03	WBCC-TV, Channel 68/Cocoa	Cocoa, FL	0	0	0
01 Oct 02	30 May 03	WBCU-TV, Channel 27/ Bowling Green	Bowling Green, OH	0	0	0

01 Oct 02	30 May 03	WCET-TV, Channel 48/Cincinnati	Cincinnati, OH	0	0	0
01 Oct 02	30 May 03	WCEU-TV, Channel 15/Daytona Beach	Daytona Beach, FL	0	0	0
01 Oct 02	30 May 03	WCNY-TV, Channel 24/Syracuse	Syracuse, NY	0	1,440,000	125,000
01 Oct 02	30 May 03	WCPB-TV, Channel 28/Salisbury	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WCVE, Community Idea Stations	Richmond, VA	0	0	0
01 Oct 02	30 May 03	WCVN-TV, Channel 54/Covington	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WEAO-TV, Channel 49/Akron	Kent, OH	0	0	0
01 Oct 02	30 May 03	WEBA-TV, Channel 14/Allendale	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WEDU-TV, Channel 3/Tampa	Tampa, FL	0	0	0
01 Oct 02	30 May 03	WEKW-TV, Channel 52/Keene	Durham, NH	0	0	0
01 Oct 02	30 May 03	WENH-TV, Channel 11/Durham	Durham, NH	0	0	0
01 Oct 02	30 May 03	West Virginia Educational Broadcasting Authority	Huntington, WV	0	0	0
01 Oct 02	30 May 03	West Virginia Public Television	Morgantown, WV	0	0	0
01 Oct 02	30 May 03	WETK-TV, Channel 33/Burlington	Colchester, VT	0	0	0
01 Oct 02	30 May 03	WFPT-TV, Channel 62/Frederick	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WFSG-TV, Channel 56/Panama City	Tallahassee, FL	0	0	0
01 Oct 02	30 May 03	WFSU-TV, Channel 11/Tallahassee	Tallahassee, FL	0	0	0
01 Oct 02	30 May 03	WGPT-TV, Channel 36/Oakland	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WGTE-TV, Channel 30/Toledo	Toledo, OH	0	0	0
01 Oct 02	30 May 03	WGVU-TV, Channel 35/ Grand Rapids	Grand Rapids, MI	0	0	0
01 Oct 02	30 May 03	WHMC-TV, Channel 23/Conway	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WHRO-TV, Channel 15/Norfolk	Norfolk, VA	0	0	0
01 Oct 02	30 May 03	Wisconsin Educational Telecommunications Board	Madison, WI	0	0	0
01 Oct 02	30 May 03	WITV-TV, Channel 7/Charleston	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WJCT-TV, Channel 7/Jacksonville	Jacksonville, FL	0	0	0
01 Oct 02	30 May 03	WJPM-TV, Channel 33/Florence	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WJWJ-TV, Channel 16/Beaufort	Beaufort, SC	0	0	0
01 Oct 02	30 May 03	WKAS-TV, Channel 25/Ashland	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKDP-TV, Channel 29/Paducah	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKGB-TV, Channel 53/Bowling Green	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKHA-TV, Channel 35/Hazard	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKLE-TV, Channel 46/Lexington-Richmond	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKMA-TV, Channel 35/Madisonville	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKMJ-TV, Channel 68/Louisville	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKMR-TV, Channel 38/Morehead	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKMU-TV, Channel 21/Murray-Mayfield	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKOH-TV, Channel 31/Owensboro-Henderson	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKON-TV, Channel 52/Owenton	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKPI-TV, Channel 22/Pikeville	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKSO-TV, Channel 29/Somerset	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WKZT-TV, Channel 23/Elizabethtown	Lexington, KY	0	0	0
01 Oct 02	30 May 03	WLAE-TV, Channel 32/New Orleans	New Orleans, LA	0	0	0
01 Oct 02	30 May 03	WLED-TV, Channel 49/Littleton	Durham, NH	0	0	0
01 Oct 02	30 May 03	WLIW-TV, Channel 21/New York	Plainview, NY	0	0	0
01 Oct 02	30 May 03	WLJT-TV, Channel 11/Martin	Martin, TN	0	0	0
01 Oct 02	30 May 03	WLPB-TV, Channel 27/Baton Rouge	Baton Rouge, LA	0	0	0
01 Oct 02	30 May 03	WLRN-TV, Channel 17/Miami	Miami, FL	0	0	0
01 Oct 02	30 May 03	WMFE-TV, Channel 24/Orlando	Orlando, FL	0	0	0
01 Oct 02	30 May 03	WMPB-TV, Channel 67/Baltimore	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WMPT-TV, Channel 22/Annapolis	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WNED-TV, Channel 17/Buffalo	Buffalo, NY	0	0	0
01 Oct 02	30 May 03	WNEH-TV, Channel 38/Greenwood	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WNEO-TV, Channel 45/Alliance	Kent, OH	0	0	0
01 Oct 02	30 May 03	WNPT-TV, Channel 8/Nashville	Nashville, TN	0	0	0
01 Oct 02	30 May 03	WNSC-TV, Channel 30/Rock Hill	Rock Hill, SC	0	0	0

01 Oct 02	30 May 03	WNTV-TV, Channel 29/Greenville	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WNYE-TV, Channel 25/New York City	Brooklyn, NY	0	0	0
01 Oct 02	30 May 03	WOSU-TV, Channel 34/Columbus	Columbus, OH	0	0	0
01 Oct 02	30 May 03	WOUB-TV, Channel 20/Athens	Athens, OH	0	0	0
01 Oct 02	30 May 03	WPBA-TV, Channel 30/Atlanta	Atlanta, GA	0	0	0
01 Oct 02	30 May 03	WPBO-TV, Channel 42/Portsmouth	Columbus, OH	0	0	0
01 Oct 02	30 May 03	WPBT-TV, Channel 2/Miami	Miami, FL	0	0	0
01 Oct 02	30 May 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	0	0
01 Oct 02	30 May 03	WPTD-TV, Channel 16/Dayton	Dayton, OH	0	0	0
01 Oct 02	30 May 03	WPTO-TV, Channel 14/Oxford	Dayton, OH	0	0	0
01 Oct 02	30 May 03	WRET-TV, Channel 49/Spartanburg	Spartanburg, SC	0	0	0
01 Oct 02	30 May 03	WRJA-TV, Channel 27/Sumter	Sumter, SC	0	0	0
01 Oct 02	30 May 03	WRLK-TV, Channel 35/Columbia	Columbia, SC	0	0	0
01 Oct 02	30 May 03	WSBE-TV, Channel 36/Providence	Providence, RI	0	0	0
01 Oct 02	30 May 03	WSKG Public Telecommunications Council	Binghamton, NY	0	0	0
01 Oct 02	30 May 03	WSRE-TV, Channel 23/Pensacola	Pensacola, FL	0	0	0
01 Oct 02	30 May 03	WSVP-TV, Channel 30/Fort Myers-Naples	Bonita Springs, FL	0	0	0
01 Oct 02	30 May 03	WUFT-TV, Channel 5/Gainesville	Gainesville, FL	0	0	0
01 Oct 02	30 May 03	WUSF-TV, Channel 16/Tampa	Tampa, FL	0	0	0
01 Oct 02	30 May 03	WVER-TV, Channel 28/Rutland	Colchester, VT	0	0	0
01 Oct 02	30 May 03	WVIZ-TV, Channel 25/Cleveland	Cleveland, OH	0	0	0
01 Oct 02	30 May 03	WVTA-TV, Channel 41/Windsor	Colchester, VT	0	0	0
01 Oct 02	30 May 03	WVTB-TV, Channel 20/Saint Johnsbury	Colchester, VT	0	0	0
01 Oct 02	30 May 03	WWPB-TV, Channel 31/Hagerstown	Owings Mills, MD	0	0	0
01 Oct 02	30 May 03	WXEL-TV, Channel 42/West Palm Beach	West Palm Beach, FL	0	0	0
01 Oct 02	30 May 03	WXXI Public Broadcasting Council	Rochester, NY	0	0	0
01 Oct 02	30 May 03	WYES-TV, Channel 12/New Orleans	New Orleans, LA	0	0	0
01 Oct 02	30 May 03	Wyoming Public Television	Riverton, WY	0	0	0
22 Feb 03	22 Feb 03	University of Washington	Seattle, WA	12	0	0

A275. Lunar Exploration from a Virtual Moon Base

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: We propose to establish a Virtual Moon Base (VMB). The VMB will be available to students and the public through a dedicated Internet Web site. Our goals are to: (1) share the excitement of discovery and lunar exploration with students as well as members of the general public; (2) produce a useful educational tool for classroom use which will aid students in learning Earth and space science; and (3) motivate the youth of Hawaii and Guam to study science, math, and technology, and to make them aware of career opportunities in these fields.

Lead: Dr. Bernard Hawke, University of Hawaii at Manoa, Honolulu, HI 96822. E-mail: hawke@higp.hawaii.edu.
Phone: 808-956-3132.

Scientist(s):	Mr. B. Ray Hawke	University of Hawaii at Manoa	Honolulu, HI
	Mr. Chris Peterson	University of Hawaii at Manoa	Honolulu, HI
	Mr. Gregory Smith	University of Hawaii at Manoa	Honolulu, HI

Partner(s):	Hawaii Space Grant Consortium	Honolulu, HI
	Moanalua High School	Honolulu, HI
	Pacific Regional Planetary Data Center	Honolulu, HI
	The Apollo Society	Honolulu, HI

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Nov 02	09 Nov 02	Punahou School	Honolulu, HI	87	220	0
14 Mar 03	14 Mar 03	Moanalua High School	Honolulu, HI	26	0	0
03 May 03	03 May 03	University of Hawaii - Windward Community College	Kaneohe, HI	0	120	0
22 Jul 03	22 Jul 03	Pacific Regional Planetary Data Center	Honolulu, HI	0	36	0

A276. LWS Follow-up Program and School Visits

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: STP/LWS Follow-up Institute participants had a World of Discovery tour of the Biosphere 2 Lab, presentations and workshops on the Sun-Earth weather and climate, and Passport to Learning activities. Participants visited and attended lectures at Kitt Peak Observatory and the Sonoran Desert Museum. Two days were devoted to discussing ongoing challenges, preparing a lesson that will incorporate information learned at the Biosphere Lab 2. Participants will send the STP/LWS E/PO office an e-portfolio at the end of the 2003-2004 school year that will include student work, assessments, and activities related to the experiences and lessons learned at the site.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s): Dr. Larry Marshall, Pima Air and Space Museum Tucson, AZ
Dr. Kenneth Potocki Johns Hopkins Applied Physics Laboratory Laurel, MD

Partner(s): Columbia University Biosphere 2 Center

Oracle, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
22 Apr 03	22 Apr 03	Glenelg Country School	Glenelg, MD	202	0	0
23 May 03	23 May 03	Forest Ridge Academy	Schereville, IN	10	0	0
28 Jul 03	01 Aug 03	Columbia University Biosphere 2 Center	Oracle, AZ	42	17	0

A277. LWS Student Internship

Theme(s): SEC

Msn/Prgm: LWS[B114]

Description: The STP/LWS internship program was a success. Students were engaged in several projects: (1) working on a new adiabatic demagnetization refrigerator (ADR) system and helping assemble and test those parts; (2) measuring the thermodynamic properties of atmospherically important molecules; (3) assisting in the acquisition and analysis of data using an operating system specifically designed to measure these properties as a function of temperature; (4) assembling and testing charged particle spectrometers for space applications, including our new project on miniature mass spectrometers using permanent magnet films; (5) christening dual-channel Sun photometer designed to measure the transmission of solar radiation through Earth's atmosphere continuously from 440 nanometers to 4.5 microns; (6) acquiring and analyzing data that can be used to determine the solar radiation reaching Earth's surface, the column abundance of the major greenhouse gases in Earth's atmosphere, the characteristics of atmospheric aerosols, and the effect of cirrus clouds on atmospheric transmission; (7) working with E/PO specialists; (8) preparing a documentary of all the STP/LWS Summer Institutes; and (9) measuring the temperature dependence of energy transfer rates for methane in collisions with various atmospherically important molecules (e.g., nitrogen).

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s): Dr. John Allen NASA Goddard Space Flight Center Greenbelt, MD
Ms. Sara Brown NASA Goddard Space Flight Center Greenbelt, MD
Dr. Mike DiPirro NASA Goddard Space Flight Center Greenbelt, MD
Dr. Fred Herrero NASA Goddard Space Flight Center Greenbelt, MD
Mr. Donald Robinson-Boonstra NASA Goddard Space Flight Center Greenbelt, MD
Dr. Jim Woods NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 May 03	31 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	12	0	0

A278. Mars Exploration Student Data Team

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Through the Mars Exploration Student Data Team, teachers and students from their schools study and characterize different aspects of the Mars atmosphere and surface to help support landed missions. Students analyze the landing sites using orbital data and compare results with rover data (ground-truthing). The student-teacher teams are competitively selected and have regular interactions with orbital science team members.

Contact: Ms. Stephenie Lievense, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Stephenie.H.Lievense@jpl.nasa.gov. Phone: 818-393-6729.

Primary URL: <http://mars/classroom/students/mesdt.html>

Scientist(s):	Dr. Phil Christensen	Arizona State University	Tempe, AZ
	Ms. Meg Hufford	Arizona State University	Tempe, AZ
	Mr. Brad Jones	Arizona State University	Tempe, AZ
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Gaylon McSmith	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Greg Mehall	Arizona State University	Tempe, AZ
	Ms. Paige Valderrama	Arizona State University	Tempe, AZ
	Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
	Mr. Keith Watt	Arizona State University	Tempe, AZ
Partner(s):	Arizona State University		Tempe, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Apr 03	30 Sep 03	Arizona State University	Tempe, AZ	0	0	0
30 Apr 03	30 Sep 03	Boynton Beach Community High School	Boynton Beach, FL	3	0	0
30 Apr 03	30 Sep 03	Haltom High School	Fort Worth, TX	3	0	0
30 Apr 03	30 Sep 03	Mountain View High School	Loveland, CO	3	0	0
30 Apr 03	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
30 Apr 03	30 Sep 03	Sage Ridge School	Reno, NV	3	0	0
30 Apr 03	30 Sep 03	Sparks High School	Sparks, NV	3	0	0

A279. Mars Robotics Education Partnership

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: This program uses robotics as a means to enable a sense of participation in Mars exploration. The goal is to build a cohesive set of robotics activities at all grade levels for progressive learning, where each set of grade-appropriate, standards-based activities prepare students for the next. The framework enables students to move through the "pipeline" to more sophisticated activities, preparing them for potential careers in technology and engineering.

Contact: Ms. Cassie Bowman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: cbowman@mail.arc.nasa.gov. Phone: 617-547-3482.

Scientist(s):	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Dr. Raymond Arvidson	Washington University	St. Louis, MO
	Ms. Cassie Bowman	NASA Ames Research Center	Moffett Field, CA
	Dr. Natalie Cabrol	SETI Institute	Mountain View, CA
	Dr. Wendy Calvin	University of Nevada, Reno	Reno, NV
	Dr. Larry Crumpler	New Mexico Museum of Natural History and Science	Albuquerque, NM
	Dr. Paulo de Souza	Johannes Gutenberg University	Mainz Germany
	Dr. Thanssis Economou	University of Chicago	Chicago, IL
	Dr. William Farrand	Space Science Institute	Boulder, CO
	Dr. Jeffrey Moersch	University of Tennessee	Knoxville, TN
	Dr. Mike Sims	NASA Ames Research Center	Moffett Field, CA
	Dr. Steve Squyres	Cornell University	Ithaca, NY
	Dr. Thomas Wdowiak	University of Alabama at Birmingham	Birmingham, AL

Dr. Michael Wolff
Mr. Albert Yen

Space Science Institute
NASA Jet Propulsion Laboratory

Boulder, CO
Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Jan 03	31 Jan 03	North Ridge Elementary School	N. Richland Hills, TX	0	89	0
11 Feb 03	11 Feb 03	Haltom High School	Fort Worth, TX	0	100	0
19 Feb 03	19 Feb 03	University of Alabama at Birmingham	Birmingham, AL	60	0	0
20 Mar 03	20 Mar 03	South Shore Harbour Conference Center	League City, TX	4	0	0
03 Apr 03	03 Apr 03	NASA Johnson Space Center	Houston, TX	2	0	0
05 May 03	05 May 03	Centaurus High School	Lafayette, CO	3	0	0
05 May 03	05 May 03	Durham Academy Upper School	Durham, NC	3	0	0
05 May 03	05 May 03	Heyworth High School	Heyworth, IL	3	0	0
05 May 03	05 May 03	Laguna-Acoma High School	New Laguna, NM	3	0	0
05 May 03	05 May 03	Milton Hershey School	Hershey, PA	3	0	0
05 May 03	05 May 03	Nardin Academy High School	Buffalo, NY	3	0	0
05 May 03	05 May 03	Ramsay High School	Birmingham, AL	3	0	0
05 May 03	05 May 03	Sam Rayburn High School	Pasadena, TX	3	0	0
05 May 03	05 May 03	Silver Stage High School	Silver Springs, NV	3	0	0
05 May 03	05 May 03	University High School	Los Angeles, CA	3	0	0
05 May 03	05 May 03	West Valley High School	Cottonwood, CA	3	0	0
05 May 03	05 May 03	Wheaton-Warrenville High School	Wheaton, IL	3	0	0
05 May 03	05 May 03	William Allen High School	Allentown, PA	3	0	0
11 Jun 03	11 Jun 03	Crowne Plaza Convention Center	Springfield, IL	35	0	0
17 Jul 03	17 Jul 03	Heyworth Community Unit School District	Heyworth, IL	26	0	0
20 Aug 03	20 Aug 03	Silver Stage High School	Silver Springs, NV	258	0	0
22 Aug 03	23 Aug 03	Schreder Planetarium and Science Learning Center	Redding, CA	0	300	0
28 Aug 03	28 Aug 03	Record Searchlight	Redding, CA	0	30,000	0
08 Sep 03	08 Sep 03	Durham Academy Upper School	Durham, NC	430	0	0
10 Sep 03	10 Sep 03	Heyworth Education Foundation	Heyworth, IL	10	0	0
11 Sep 03	11 Sep 03	Coal Creek Rotary Club	Louisville, CO	50	0	0
20 Sep 03	20 Sep 03	McWane Science Center	Birmingham, AL	23	0	0

A280. Mars Student Imaging Project

Theme(s): SSE

Msn/Prm: Mars E/PO[B40]

Description: The Mars Student Imaging Project utilizes a NASA imaging facility at Arizona State University for scientists and students who are studying Mars. It is available to grades 5-12 and undergraduate educators and students. Teacher guides and curriculum supplements use real data, at first, from the orbital data obtained by the Mars Global Surveyor and 2001 Mars Odyssey and, later, by the Mars Reconnaissance Orbiter. This orbital data is compared to ground data collected from the Mars Pathfinder and, later, from the Mars Exploration Rovers and Mars Smart Lander. Activities are tested and reviewed by scientists and master educators and are made available online and in hard copy. All are inquiry-based activities that meet the national science, mathematics, and technology education standards. Pre- and postproject mentoring for teachers is a part of the program design, maximizing the impact of a real-science infusion into the classroom. A number of middle school, high school, and undergraduate student teams also have the opportunity to participate directly in the scientific exploration of Mars in near-real time. A percentage of the pictures taken by the Thermal Emission Imaging System instrument on the Odyssey spacecraft (and perhaps others over time) is dedicated to student use. Student teams from across the United States submit proposals to take pictures of specific regions of Mars, explaining the scientific questions they would like to answer. They then participate in acquiring the image, analyzing the data, and presenting their findings. At least one-quarter of the imaging-team slots are reserved for underrepresented groups (minority, female, rural, and inner-city), which are recruited through contacts with minority institutions and other programs. In addition to onsite student missions, opportunities for students exist through distance learning and through a special archived-image library of data that will be developed using data from all of NASA's past, present, and future Mars missions.

Contact: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.

Primary URL: <http://msip@asu.edu>2nd URL: <http://mars.jpl.nasa.gov>

Scientist(s):	Dr. Joshua Bandfield	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Phil Christensen	Arizona State University	Tempe, AZ
	Mr. Andras Dombovari	Arizona State University	Tempe, AZ
	Mr. Tim Glotch	Arizona State University	Tempe, AZ
	Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Ms. Laura Mehall	Arizona State University	Tempe, AZ
	Ms. Kim Murray	Arizona State University	Tempe, AZ
	Mr. Scott Nowicki	Arizona State University	Tempe, AZ
	Dr. Jim Rice	Arizona State University	Tempe, AZ
	Ms. Deanne Rogers	Arizona State University	Tempe, AZ
	Dr. Kuzmin Ruslin	Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences	Moscow, Russia
	Ms. Paige Valderrama	Arizona State University	Tempe, AZ
	Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
	Mr. Keith Watt	Arizona State University	Tempe, AZ
	Ms. Sally Watt	Arizona State University	Tempe, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	20 Dec 02	Youngstown State University	Youngstown, OH	76	0	0
01 Oct 02	31 Dec 02	Arizona State University	Tempe, AZ	70	0	0
01 Oct 02	28 Jan 03	Arizona State University	Tempe, AZ	11	0	0
01 Oct 02	30 May 03	Arizona State University	Tempe, AZ	13	0	0
01 Nov 02	31 Dec 02	Arizona State University	Tempe, AZ	26	0	0
01 Nov 02	31 Dec 02	Webster Intermediate School	Webster, TX	26	0	0
01 Nov 02	30 Sep 03	Webster Intermediate School	Webster, TX	13	0	0
12 Nov 02	14 Nov 02	Arizona State University	Tempe, AZ	11	13	0
19 Nov 02	22 Nov 02	Washington Math and Science Elementary School	Midland, TX	16	0	0
25 Nov 02	27 Nov 02	Arizona State University	Tempe, AZ	26	125	0
02 Dec 02	04 Dec 02	Arizona State University	Tempe, AZ	11	0	0
20 Dec 02	20 Dec 02	Arizona State University	Tempe, AZ	25	0	0
10 Jan 03	01 Jun 03	Arizona State University	Tempe, AZ	76	0	0
14 Jan 03	14 Jan 03	Arizona State University	Tempe, AZ	132	0	0
14 Jan 03	11 Jul 03	Arizona State University	Tempe, AZ	121	0	0
16 Jan 03	16 Jan 03	Arizona State University	Tempe, AZ	137	0	0
17 Jan 03	17 Jan 03	Arizona State University	Tempe, AZ	129	0	0
06 Feb 03	06 Feb 03	Arizona State University	Tempe, AZ	90	600	0
10 Feb 03	12 Feb 03	Arizona State University	Tempe, AZ	16	0	0
14 Apr 03	16 Apr 03	Arizona State University	Tempe, AZ	13	0	0
17 Apr 03	01 May 03	Arizona State University	Tempe, AZ	86	0	0
21 Apr 03	23 Apr 03	Arizona State University	Tempe, AZ	37	0	0
22 Apr 03	21 Jun 03	Arizona State University	Tempe, AZ	51	0	0
22 Apr 03	30 Sep 03	Arizona State University	Tempe, AZ	11	0	0
22 Apr 03	30 Sep 03	Arizona State University	Tempe, AZ	28	0	0
22 Apr 03	30 Sep 03	Arizona State University	Tempe, AZ	31	0	0
22 Apr 03	30 Sep 03	Arizona State University	Tempe, AZ	9	0	0
29 Apr 03	01 May 03	Arizona State University	Tempe, AZ	10	0	0
27 May 03	30 Sep 03	Arizona State University	Tempe, AZ	23	0	0
30 May 03	30 Sep 03	Arizona State University	Tempe, AZ	101	0	0
01 Jun 03	30 Sep 03	Arizona State University	Tempe, AZ	131	0	0
11 Jun 03	30 Sep 03	Arizona State University	Tempe, AZ	16	0	0
19 Jun 03	30 Sep 03	Arizona State University	Tempe, AZ	91	0	0
23 Jun 03	30 Sep 03	Arizona State University	Tempe, AZ	26	0	0

08 Jul 03	10 Jul 03	Arizona State University	Tempe, AZ	5	0	0
08 Jul 03	30 Sep 03	Arizona State University	Tempe, AZ	26	0	0
12 Aug 03	30 Sep 03	Arizona State University	Tempe, AZ	61	0	0
19 Aug 03	30 Sep 03	Arizona State University	Tempe, AZ	51	0	0
19 Aug 03	30 Sep 03	Arizona State University	Tempe, AZ	36	0	0
01 Sep 03	30 Sep 03	Arizona State University	Tempe, AZ	36	0	0
09 Sep 03	30 Sep 03	Arizona State University	Tempe, AZ	17	0	0
12 Sep 03	30 Sep 03	Arizona State University	Tempe, AZ	29	0	0
12 Sep 03	30 Sep 03	Grosse Pointe North High School	Grosse Pointe, MI	44	0	0
29 Sep 03	30 Sep 03	National Space Science and Technology Institute	Colorado Springs, CO	2	0	0

A281. Mars Student Workshops

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars student workshops provide hands-on, inquiry-based educational experiences related to Mars (e.g. geology, astrobiology). The activities are aligned with the national science and technology education standards. They are led by master educators for K–12 students.

Contact: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.

Primary URL: <http://marsed.asu.edu>

Scientist(s):	Ms. Jessica Collisson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Mr. Alex Kory	Arizona State University	Tempe, AZ
	Ms. Paige Valderrama	Arizona State University	Tempe, AZ
	Mr. Keith Watt	Arizona State University	Tempe, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Estrella Mountain Community College	Avondale, AZ	590	0	0
19 Oct 02	19 Oct 02	Millcreek Education Center	Erie, PA	298	0	0
29 Mar 03	29 Mar 03	California Institute of Technology	Pasadena, CA	800	0	0
04 Aug 03	04 Aug 03	Arizona State University	Tempe, AZ	17	0	0

A282. Mars: Classroom Visits

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars classroom visits are presentations in a formal education setting that supplement ongoing learning in the classroom, highlighting how science, mathematics, and technology instruction relates to Mars exploration and vice versa. Scientists and engineers who are working on Mars missions volunteer their time, provide role-modeling experiences for students, and generate an interest in scientific discovery, technology innovation, and space-exploration careers. They also assist in disseminating Mars-related educational and informational materials to teachers and students. In addition to Mars missions, these visits teach students about Mars and compare it to Earth, bringing visuals and stories that make Mars an increasingly familiar planet and place to explore. They also alert teachers and students to the ongoing opportunities and programs in which they can participate.

Contact: Mr. Stephanie Lear, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Stephanie.L.Lear@jpl.nasa.gov.

Scientist(s):	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Ms. Kelly Bender	Arizona State University	Tempe, AZ
	Mr. James Diener	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Saina Ghandchi	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Tim Glotch	Arizona State University	Tempe, AZ
	Mr. Richard Guerrero	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Cecilia Guiar	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Paul Herrera	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Sheri Klug	Arizona State University	Tempe, AZ
	Mr. Michael Nieto	NASA Jet Propulsion Laboratory	Pasadena, CA

Dr. Terry Scharton	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Seidel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
Dr. Eddie Tunstel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
Mr. Keith Watt	Arizona State University	Tempe, AZ
Mr. Harry Woo	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Oct 02	09 Oct 02	Arizona State University	Tempe, AZ	3	360	0
11 Oct 02	11 Oct 02	Palm Crest Elementary School	La Cañada, CA	18	0	0
17 Oct 02	17 Oct 02	Gardner High School	Gardner, MA	31	0	0
28 Oct 02	28 Oct 02	Arizona State University	Tempe, AZ	18	0	0
15 Nov 02	15 Nov 02	St. Bellarmine School	Burbank, CA	126	0	0
19 Nov 02	19 Nov 02	Loyola Marymount University	Marina del Rey, CA	22	0	0
04 Dec 02	06 Dec 02	South Park Elementary School	Los Angeles, CA	1045	0	0
06 Dec 02	06 Dec 02	Castlebay Elementary School	Northridge, CA	165	0	0
11 Dec 02	11 Dec 02	South Park Elementary School	Los Angeles, CA	33	0	0
12 Dec 02	12 Dec 02	Elysian Heights Elementary School	Los Angeles, CA	43	0	0
16 Dec 02	16 Dec 02	Arizona State University	Tempe, AZ	23	0	0
18 Dec 02	18 Dec 02	Montague Charter Academy	Pacoima, CA	157	0	0
22 Jan 03	22 Jan 03	Simi Valley Elementary School	Simi Valley, CA	108	0	0
13 Feb 03	13 Feb 03	Arizona State University	Tempe, AZ	26	0	0
10 Mar 03	10 Mar 03	Monte Vista Elementary School	La Crescenta, CA	111	0	0
13 Mar 03	13 Mar 03	Aprende Middle School	Chandler, AZ	27	0	0
13 Mar 03	13 Mar 03	Aprende Middle School	Chandler, AZ	24	0	0
13 Mar 03	13 Mar 03	Aprende Middle School	Chandler, AZ	25	0	0
13 Mar 03	13 Mar 03	Aprende Middle School	Chandler, AZ	28	0	0
13 Mar 03	13 Mar 03	Wilson Middle School	Pasadena, CA	1,430	0	0
02 Apr 03	02 Apr 03	Boise State University	Boise, ID	105	0	0
03 Apr 03	03 Apr 03	Middleton High School	Middleton, ID	131	0	0
22 Apr 03	22 Apr 03	Cocopah Middle School	Scottsdale, AZ	101	0	0
28 Apr 03	28 Apr 03	Cocoa Beach High School	Cocoa Beach, FL	999	0	0
28 Apr 03	28 Apr 03	McNair Middle School	Cocoa, FL	103	0	0
28 Apr 03	28 Apr 03	Saturn Elementary School	Cocoa, FL	155	0	0
28 Apr 03	28 Apr 03	Spessard Holland Elementary School	Satellite Beach, FL	104	0	0
28 Apr 03	28 Apr 03	Surfside Elementary School	Satellite Beach, FL	167	0	0
29 Apr 03	29 Apr 03	Imperial Estates Elementary School	Titusville, FL	205	0	0
29 Apr 03	29 Apr 03	Madison Middle School	Titusville, FL	432	0	0
29 Apr 03	29 Apr 03	Oak Park Elementary School	Titusville, FL	373	0	0
30 Apr 03	30 Apr 03	Pinewood Elementary School	Mims, FL	255	0	0
30 Apr 03	30 Apr 03	Riviera Elementary School	Palm Bay, FL	364	0	0
30 Apr 03	30 Apr 03	Sea Park Elementary School	Satellite Beach, FL	249	0	0
30 Apr 03	30 Apr 03	Turner Elementary School	Palm Bay, FL	129	0	0
01 May 03	01 May 03	Central Middle School	West Melbourne, FL	102	0	0
01 May 03	01 May 03	Riviera Elementary School	Palm Bay, FL	104	0	0
01 May 03	01 May 03	Roy Allen Elementary School	Melbourne, FL	91	0	0
01 May 03	01 May 03	Stone Middle School	Melbourne, FL	410	0	0
01 May 03	01 May 03	Turner Elementary School	Palm Bay, FL	107	0	0
02 May 03	02 May 03	Audubon Elementary School	Merritt Island, FL	97	0	0
02 May 03	02 May 03	Gardendale Elementary Science Magnet School	Merritt Island, FL	117	0	0
02 May 03	02 May 03	Merritt Island Christian School	Merritt Island, FL	165	0	0
02 May 03	02 May 03	Merritt Island High School	Merritt Island, FL	203	0	0
02 May 03	02 May 03	Tropical Elementary School	Merritt Island, FL	250	0	0
14 May 03	14 May 03	Sage Ridge School	Reno, NV	360	0	0

22 May 03	22 May 03	Kyrene Monte Vista Elementary School	Ahwatukee, AZ	25	0	0
16 Jun 03	16 Jun 03	St. Philip the Apostle School	Pasadena, CA	42	0	0
03 Sep 03	03 Sep 03	Mid-Carolina High School	Prosperity, SC	221	0	0
30 Sep 03	30 Sep 03	Hudson Elementary School	Long Beach, CA	281	0	0
30 Sep 03	30 Sep 03	Juan Rodriguez High School	Long Beach, CA	255	0	0

A283. MIT Center for Space Research Informal Education

Theme(s): SEU

Msn/Prgm: CX0[B65]

Description: Scientists and engineers introduced the Chandra mission to several groups of students by visiting classrooms and other educational venues. They also took students and their teachers on tours of the Chandra Operation and Control Center (OCC) and the High Energy Transmission Gratings (HETG) Test/Alignment Facility. Chandra, the world's most powerful X-ray telescope, allows scientists to study the origin, structure, and evolution of our universe in greater detail than ever before. The science instruments on board are controlled by commands transmitted from the OCC in Cambridge, MA. Each tour started with a presentation of Chandra and simple hands-on activities to explain the importance of multiwavelength astronomy and introduce basic concepts of spectroscopy. During the tour, the students were shown where scientists and engineers direct the flight and execute the observing plan of Chandra and receive the scientific data from the observatory. The students learned about the basics of X-ray astronomy and the latest exciting discoveries made by MIT scientists with data acquired via Chandra. This program is coordinated with personnel of the Chandra X-Ray Observatory OCC.

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

Primary URL: <http://space.mit.edu/CSR/outreach>

Scientist(s):	Dr. Royce Buehler	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Michael Doucette	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Amy Fredericks	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Deborah Gage	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Sarah Gallagher	Massachusetts Institute of Technology	Cambridge, MA
	Dr. David Huenemoerder	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Mario Jimenez-Garate	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Adrienne Juett	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Robert Laliberte	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Sera Markoff	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Herman Marshall	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Raquel Morales	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Bruce Roberts	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Meredith Tanguay	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Kevin Tibbetts	Massachusetts Institute of Technology	Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Nov 02	08 Nov 02	Cummings School	Somerville, MA	23	0	0
12 Dec 02	12 Dec 02	Cummings School	Somerville, MA	23	0	0
17 Dec 02	17 Dec 02	Massachusetts Institute of Technology	Cambridge, MA	25	0	0
20 Mar 03	20 Mar 03	Massachusetts Institute of Technology	Cambridge, MA	49	0	0
15 Apr 03	15 Apr 03	Massachusetts Institute of Technology	Cambridge, MA	34	0	0
15 Apr 03	15 Apr 03	Massachusetts Institute of Technology	Cambridge, MA	12	0	0
01 May 03	01 May 03	Massachusetts Institute of Technology	Cambridge, MA	26	0	0
25 Jul 03	25 Jul 03	Massachusetts Institute of Technology	Cambridge, MA	28	0	0
29 Jul 03	29 Jul 03	Massachusetts Institute of Technology	Cambridge, MA	14	0	0

A284. MIT Chandra/Gear Up Summer Program

Theme(s): SEU

Msn/Prgm: CX0[B65]

Description: Under a Chandra Cycle 4 E/PO Grant, a group of extremely motivated high school students from the Boston public schools attended the Chandra/Gear Up summer program offered by the MIT Center for Space Research in collaboration with the Museum of Science, Boston. One of the main goals for the program was to increase students' academic performance and preparation for college with activities that focus on the direct connection between great achievements, such as those obtained with Chandra, and the basics of science that the students are learning in school. The program featured two weeks of activities designed to investigate the properties of the electromagnetic spectrum and learn about the life cycle of stars. Each day, the students were offered presentations on Chandra's new discoveries by MIT scientists and engaged in hands-on activities, science projects, and museum explorations. The program benefited from collaborations with various local scientific institutions, including a star gazing party organized by the Harvard College Observatory with the support of the SEU Forum, scientists from the Harvard-Smithsonian Center for Astrophysics, and amateur astronomers from the Amateur Telescope Makers of Boston. Scientists and educators from the MIT Haystack Observatory engaged the students in radio observations with the Haystack Small Radio Telescope. During the two weeks, the students worked on several science presentations that were featured at a final event open to family members, museum staff, and Chandra scientists. On that occasion, two students from the program were awarded Chandra internships to work on interpretations to introduce the Chandra mission to young audiences.

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

Primary URL: <http://space.mit.edu/CSR/outreach>

Scientist(s):	Ms. Mary Dussault	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Ari Epstein	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Amy Fredericks	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Sarah Gallagher	Massachusetts Institute of Technology	Cambridge, MA
	Dr. David Huenemoerder	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Bish Ishibashi	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Mario Jimenez-Garate	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Adrienne Juett	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Walter Lewin	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Herman Marshall	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Jonathan McDowell	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Raquel Morales	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Stephen Murray	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Thomas Pannuti	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Preethi Pratap	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Michael Schiess	Museum of Science	Boston, MA
	Dr. Leonard Strachan	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Meredith Tanguay	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Kevin Tibbetts	Massachusetts Institute of Technology	Cambridge, MA
Partner(s):	Museum of Science		Boston, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Jun 03	03 Jul 03	Massachusetts Institute of Technology	Cambridge, MA	61	0	0

A285. NASA Astrobiology Institute (NAI)/Ames Research Center: Astrobiology Academy

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: NAI, through its NASA Ames Research Center Lead Team, participates in the Astrobiology Academy by presenting lectures to students, offering lab tours, and hosting student interns from the Academy. The students have a research mentor from Ames who works with them as they develop their projects and meets with them to oversee research developments.

Contact: Ms. Catherine Tsairides, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: ctsairides@mail.arc.nasa.gov. Phone: 650-604-0808.

Primary URL: <http://academy.arc.nasa.gov>

A286. NASA Astrobiology Institute (NAI)/University of Colorado, Boulder: Astrobiology Traveling Show

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The University of Colorado at Boulder is piloting a new program of extramural public symposiums (informally called our "traveling show") to visit places that generally are not able to support this type of activity on their own. We target 2- and 4-year colleges and universities that generally do not have sufficient resources to support visits by leading researchers and schools that serve historically underrepresented populations. We expose them to cutting-edge research and the excitement of astrobiology. In this instance, we visited Ft. Lewis College in Durango, Colorado. We presented an evening public symposium for their faculty, students, and the local community, and conducted small group meetings with students and faculty. Ft. Lewis College is a 4-year undergraduate school that historically caters to Native American students. This first symposium will involve William Friedman (talking about the origin and evolution of life on Earth), Bruce Jakosky (on the possibility of life in the rest of our Solar System), and John Bally (on planets and life outside of our Solar System).

Contact: Dr. Emily Cobabe-Amman, University of Colorado, Boulder, CO 80309. E-mail: ecobabe@asp.colorado.edu.

A287. NASA Astrobiology Institute (NAI)/Marine Biological Laboratory: Classroom Presentations on Microbial Mats

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: Lorraine Olendzenski met with three Grade 7 classrooms (45 students total) at Falmouth Academy to discuss the importance of microbial mat communities to the study of astrobiology. Students were asked "What do you know about microbial mats?"; engaged in a questioning circle with microbial mat samples; viewed "From Bacteria to Biosphere," a video on microbial communities; and discussed slides showing modern microbial mats, stromatolites, and the early fossil record.

Contact: Dr. Lorraine Olendzenski, Marine Biological Laboratory, Woods Hole, MA 02543. E-mail: lolendzenski@mbi.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Feb 03	12 Feb 03	Falmouth Academy	Falmouth, MA	45	0	0

A288. NASA Astrobiology Institute (NAI)/Penn State University: Astrobiology Summer Program (ASP)

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: ASP is an undergraduate summer training program in astrobiology, established at Penn State with the help of a 3-year National Science Foundation Research for Undergraduates award. During the summer of 2003, ASP enabled 10 sophomores and juniors from other colleges and universities to participate in research training under the guidance of Penn State Astrobiology Research Center (PSARC) faculty mentors. Women and minorities are encouraged to apply. Five PSARC faculty hosted students during summer of 2003 summer. Besides laboratory research, ASP students also have the opportunity to participate in a research excursion to a modern analog of a Precambrian ocean (Green Lake, New York), attend weekly seminars and laboratory tours, stargaze, and participate in a discussion group and a research symposium.

Contact: Dr. Lisa Brown, Pennsylvania State University, University Park, PA 16802. E-mail: lisabrown@psu.edu.

Primary URL: http://psarc.geosc.psu.edu/education/summer_programs.htm

A289. NASA Astrobiology Institute (NAI): "Ask an Astrobiologist"

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: "Ask An Astrobiologist" is a Web-based product for students and Web users of all ages that offers keyword-searchable and categorized questions and answers in astrobiology and related science disciplines. Users are invited to browse the archive and submit new questions. The questions are answered by the NAI Senior Scientist, David Morrison. A few questions are identified for longer, higher profile answers in the Featured Questions section. "Ask An Astrobiologist" receives approximately 30 questions a month from readers of all ages and backgrounds. Revisions this year included upgrades to the categorization and user process for submitting questions, new featured questions, an extensive video archive for career-related information, and a more uniform and timely preparation of responses by the NAI Senior Scientist.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail:

kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: *dscalice@mail.arc.nasa.gov*.
Phone: 650-604-4024.

Primary URL: *http://nai.arc.nasa.gov/astrobio/index.cfm*

A290. NASA Astrobiology Institute (NAI): Astro-Venture

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NAI[B34]

Description: Astro-Venture is an educational, interactive, multimedia Web site focusing on astrobiology. Developed by the education division at NASA Ames Research Center and funded in part by the NAI, this educational site designed for students in grades 5-8, allows students to role-play NASA occupations to learn about what characteristics make a planet habitable to humans. Astro-Venture is divided into five sections: Astronomy, Biology, Geology, Atmospheric Sciences, and Design a Planet. Each of the first four sections includes on line multimedia modules and lessons. NAI provides scientific review and experts for Webcasts and Webchats. This year, the Astro-Venture team led numerous workshops with both teachers and students throughout the country. Three modules in atmospheric science, geology, and biology were completed and released, and the Atmospheric Science Educator Guide won two awards for excellence and was featured in three articles.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: *dscalice@mail.arc.nasa.gov*.
Phone: 650-604-4024.

Primary URL: *http://astroventure.arc.nasa.gov*

A291. NASA Astrobiology Institute (NAI): Involvement with Undergraduate and Graduate Students

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: As a relatively new scientific field, astrobiology must be very focused on one of the major educational goals of NASA recruitment of students. Student training is one of the five mission statements of the NAI, and all NAI Lead Teams are engaged in the direct training of students through 15 academic courses and several degree programs, including the development of an astrobiology minor, a certificate program, and doctoral programs. NAI researchers also participate in the more informal, yet equally valuable, work of mentoring and internships. Six NAI Lead Teams offer one-on-one mentoring and intern programs and support of student groups focused on astrobiology.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail:
kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: *dscalice@mail.arc.nasa.gov*.
Phone: 650-604-4024.

Primary URL: *http://nai.arc.nasa.gov/institute/college_courses*

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Mar 03	30 Apr 03	University of Colorado, Boulder	Boulder, CO	2	0	0

A292. NASA Astrobiology Institute/UCLA: The Licancabur Expedition

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The 2002 Licancabur Expedition involved students nationally and internationally. Students submitted questions online, which were answered live from the field, as well as throughout the year. The Licancabur volcano (5916m) located at the boundary of Chile and Bolivia, hosts the highest and one of the least-explored lakes on Earth. The lake environment combines low oxygen, low atmospheric pressure, and high ultraviolet (UV) radiation. Sediments are formed in volcanic material. The lake is ice-covered most of the year, but the bottom water temperature remains above freezing. These conditions make Licancabur a unique analog to ancient Martian lakes. Despite the extreme environment, living organisms are thriving in the lake. The Licancabur project aims at exploring and understanding this unique environment through two high-altitude expeditions in 2002 and 2003 that will provide: (1) critical astrobiological information about the limits of life on Earth, (2) scientific clues about potential analogous sites on Mars, and (3) elements to design science mission strategies for planetary exploration and the search for life in the Solar System. Field updates were listed frequently, and two student contests were held. Teacher resources were developed (astrobiology lesson plans and links for Chile and Bolivia). The expedition was followed by school visits and lectures; the team visited and spoke at

one public and one private school in Antofagasta, Chile.

Contact: Ms. Barbara Laval, University of California, Los Angeles, Los Angeles, CA 90095. E-mail: blaval@ucla.edu.

Primary URL: <http://www.extremeenvironment.com>

A293. NASA Connect: Having a Solar Blast

Theme(s): SEC

Msn/Prgm: ACE[B98], IMAGE[B100], RHESSI[B102], SOHO[B112]

Description: NASA engineers and researchers use data analysis and measurement to predict solar storms, anticipate how they will affect Earth, and improve our understanding of the Sun-Earth system. Dr. Eric Christian was one of the featured scientists on the show, talking about the Sun. The program was broadcast in March 2002 and reached over 1,000,000 student viewers. The program was honored in 2003 with a Regional Emmy in the Children/Youth Programming category.

Lead: Dr. Eric Christian, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: erc@cosmicra.gsfc.nasa.gov. Phone: 301-286-1041.

Primary URL: <http://connect.larc.nasa.gov>

Scientist(s): Dr. Eric Christian NASA Office of Space Science Washington, DC

Partner(s): American Institute for Aeronautics and Astronautics Reston, VA

Hardy Middle School Washington, DC

Maryland Science Center Baltimore, MD

National Council of Teachers of Mathematics (NCTM) Reston, VA

Riverdeep Interactive Learning Limited Novato, CA

The Odyssey School Baltimore, MD

U.S. Naval Observatory Washington, DC

University of California, Berkeley Berkeley, CA

University of Maryland College Park, MD

A294. Navigator: Student Support and Classroom Visits

Theme(s): ASO

Msn/Prgm: Navigator[B27], KECK[B28], LBTI[B29], SIM[B31], TPF[B32]

Description: Navigator disseminates speakers and resources into K-12 classrooms to involve students and teachers in the authentic process of discovery in order to achieve educational excellence in scientific literacy.

Lead: Ms. Jenny Tieu, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: jenny.t.tieu@jpl.nasa.gov. Phone: 818-393-4765.

Scientist(s):	Mr. Eric Bloemhof	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Phil Crane	NASA Office of Space Science	Washington, DC
	Dr. Riley Duren	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Tony Hull	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Dominique Panzarello	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Leonard Reder	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Larry Simmons	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Dec 02	10 Dec 02	Desert Ridge Junior High School	Mesa, AZ	160	0	0
22 Jan 03	22 Jan 03	McKinley School	Pasadena, CA	72	0	0
31 Jan 03	31 Jan 03	Palomar Mountain Elementary School	Palomar Mountain, CA	25	0	0
01 Feb 03	01 Feb 03	Mt. Holly Elementary School	Mt. Holly, VT	26	0	0
10 Feb 03	10 Feb 03	Alameda Elementary School	Portland, OR	25	0	0
07 Mar 03	07 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	24	0	0
26 Mar 03	26 Mar 03	La Bleu Chateau Residence Council	Burbank, CA	0	25	0
13 Apr 03	13 Apr 03	Cerritos Stake Center	Cerritos, CA	0	130	0
23 Apr 03	23 Apr 03	Woodrow Wilson High School	Los Angeles, CA	52	0	0

A295. NEAR Student Support

Theme(s): SEC, SSE

Msn/Prgm: NEAR[B55]

Description: The E/PO office helped scientists, engineers, and other team members become involved in E/PO efforts by providing opportunities for participation in student events. This office coordinated and hosted these events and provided the resources necessary for the team members to talk to student participants, present demonstrations and tours, serve on panels, and have direct interaction with students regarding Johns Hopkins University Applied Physics Laboratory-supported NASA missions.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Contact: Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.

Primary URL: <http://near.jhuapl.edu>

2nd URL: www.spaceacademy.jhuapl.edu

Scientist(s):	Mr. Mike Buckley	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Andrew Santo	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Robert Wright	Johns Hopkins Applied Physics Laboratory	Laurel, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Oct 02	10 Oct 02	Glenelg Country School	Glenelg, MD	22	0	0
08 Jan 03	08 Jan 03	Fountain Green Elementary School	Bel Air, MD	124	0	0
24 Apr 03	24 Apr 03	Green Valley Elementary School	Monrovia, MD	29	0	0

A296. New England After-School Programs in Space Science

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: After-school programs enable teachers to inspire and enrich their students in ways that transcend the constraints of the heavily scheduled school day. NESSIE agents have facilitated after-school programs in X-ray astronomy and astrobiology for Boston-area students and their teachers. These programs took place at the Museum of Science, Boston, and were led by scientists associated with the Chandra and Keck Interferometer missions. NESSIE agents also are facilitating after-school programs in space science for underserved families, scouts, and other community organizations.

Contact: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/cst>

2nd URL: <http://www.mos.org/nessie>

Scientist(s):	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Dr. Dan Clemens	Boston University	Boston, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
26 Oct 02	26 Oct 02	Museum of Science	Boston, MA	37	0	0
23 Nov 02	23 Nov 02	Museum of Science	Boston, MA	32	0	0
12 Apr 03	12 Apr 03	Museum of Science	Boston, MA	35	0	0
13 Apr 03	13 Apr 03	Needham Public School System	Needham, MA	180	0	0
13 Jun 03	13 Jun 03	Needham Public School System	Needham, MA	8	0	0

A297. New England Space Scientists in the Classroom

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: New England space scientists, in partnership with K-12 educators, are bringing their knowledge of space science and enthusiasm for space exploration to the classroom. These long-term scientist/educator partnerships are some of the most effective and rewarding ways for space scientists to become engaged in E/PO. The events listed below include space scientists who have received professional development through NESSIE and its partners. Many of the scientists have been trained in E/PO together with classroom educators, so that they can understand the myriad issues and concerns related to K-12 education.

Lead: Ms. Cathleen Clemens, Museum of Science, Boston, MA 02114-1099. E-mail: cclemens@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/nessie>

2nd URL: <http://hea-www.harvard.edu/astro/index.html>

Scientist(s): Ms. Cathleen Clemens Museum of Science Boston, MA
 Dr. R. Hank Donnelly Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Dr. Philip Kaaret Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Dr. William Waller Tufts University Medford, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Oct 02	10 Oct 02	River Valley Charter School	Newburyport, MA	62	0	0
04 Nov 02	04 Nov 02	River Valley Charter School	Newburyport, MA	1	0	0
15 Nov 02	15 Nov 02	Needham Public School System	Needham, MA	635	0	0
06 Dec 02	06 Dec 02	Ridge Road Elementary School	North Haven, CT	32	0	0
05 Jan 03	15 Mar 03	Natick Public School System	Natick, MA	127	0	0
24 Jan 03	24 Jan 03	Rockport Community Schools	Rockport, MA	35	0	0
07 Apr 03	06 Jun 03	Salem School District	Salem, MA	122	0	0
13 Jun 03	13 Jun 03	River Valley Charter School	Newburyport, MA	62	0	0

A298. New Horizons Student Support

Theme(s): SEC, SSE

Msn/Prgm: MRO[B45], New Horizons[B48], MESSENGER[B54], NEAR[B55], STEREO[B96], TIMED[B97]

Description: The E/PO office helped scientists, engineers, and other team members become involved in E/PO efforts by providing opportunities for participation in student events. This office coordinated and hosted events and provided the resources necessary for the team members to talk to student participants, present demonstrations and tours, serve on panels, and have direct interaction with students regarding Johns Hopkins University Applied Physics Laboratory-supported NASA missions.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Primary URL: <http://www.pluto.jhuapl.edu>

Scientist(s):	Mr. Luke Becker	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Ms. Kerri Beisser	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Ms. Alice Bowman	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Mike Buckley	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Ms. Linda Butler	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Andrew Cheng	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Marc Clayton	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. George Dakermanji	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Ms. M. Constance Finney	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Laurence Frank	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Timothy Geipe	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Robert Gold	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Timothy Herder	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Christopher Hersman	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Scott Lange	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Ralph McNutt	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Walter Mitnick	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. T. J. Mulich, Jr.	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Ted Nichols II	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Stephen Oden	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Louise Prockter	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Ronald Stanford	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. S. Alan Stern	Southwest Research Institute	Boulder, CO
	Mr. James Stratton	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Steve Vernon	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Scott Weidner	Southwest Research Institute	Boulder, CO
	Mr. Bruce Williams	Johns Hopkins Applied Physics Laboratory	Laurel, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 Oct 02	29 Oct 02	Martin Luther King Middle School	Beltsville, MD	37	0	0
01 Nov 02	01 Nov 02	Glenelg Country School	Glenelg, MD	21	0	0
11 Nov 02	11 Nov 02	Glenelg Country School	Glenelg, MD	21	0	0
15 Nov 02	15 Nov 02	Martin Luther King Middle School	Beltsville, MD	122	0	0
03 Dec 02	03 Dec 02	Southwest Research Institute	San Antonio, TX	102	0	0
04 Dec 02	04 Dec 02	Glenelg Country School	Glenelg, MD	21	0	0
08 Jan 03	08 Jan 03	Fountain Green Elementary School	Bel Air, MD	123	0	0
21 Jan 03	21 Jan 03	Westminster Baptist Church	Westminster, MD	45	0	0
07 Mar 03	07 Mar 03	Rippling Woods Elementary School	Glen Burnie, MD	26	0	0
17 Mar 03	17 Mar 03	Fort Garrison Elementary School	Pikesville, MD	83	0	0
19 Mar 03	19 Mar 03	Beltsville Academic Center	Beltsville, MD	204	0	0
07 Apr 03	07 Apr 03	Rosemary Hills Primary School	Silver Spring, MD	28	0	0
08 Apr 03	08 Apr 03	Mt. Airy Middle School	Mt. Airy, MD	205	0	0
10 Apr 03	10 Apr 03	St. Andrews Episcopal School	Potomac, MD	300	0	0
17 Apr 03	17 Apr 03	Linton Springs Elementary School	Sykesville, MD	60	0	0
02 May 03	02 May 03	Susquehanna Township Middle School	Harrisburg, PA	150	0	0
27 May 03	22 Aug 03	Johns Hopkins Applied Physics Laboratory	Laurel, MD	1	0	0
02 Jun 03	03 Jun 03	NASA Educator Resource Center	Fairmont, WV	45	0	0
07 Jul 03	18 Jul 03	Johns Hopkins Applied Physics Laboratory	Laurel, MD	39	0	0
15 Aug 03	15 Aug 03	Oak Street AME Church	Baltimore, MD	18	0	0

A299. NIGHTGLOW: Classroom Talk

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: Grade 7-10 students at the Alice Springs High School were given a presentation on the NIGHTGLOW mission. A research team was in Alice Springs preparing to launch this scientific balloon experiment, and the talk provided an opportunity for the students to find out why NASA had so many people in their town. Students learned about the NIGHTGLOW mission, scientific ballooning, and NASA in general.

Lead: Dr. Eric Christian, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: erc@cosmicra.gsfc.nasa.gov. Phone: 301-286-1041.

Scientist(s):	Dr. Louis Barbier	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Robert Hull	New Mexico State University, Las Cruces	Las Cruces, NM

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Feb 03	04 Feb 03	Alice Springs High School	Alice Springs, Australia	105	0	0
05 Feb 03	05 Feb 03	Alice Springs High School	Alice Springs, Australia	105	0	0

A300. NIGHTGLOW: Hangar Tour

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: Students from Anzac High School in Alice Springs, Australia, were given a tour of the Alice Springs balloon base and a description of the NIGHTGLOW instrument.

Lead: Dr. Louis Barbier, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lm@cosmicra.gsfc.nasa.gov. Phone: 301-286-4054.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Feb 03	12 Feb 03	Alice Springs Balloon Launching Station	Alice Springs, Australia	11	0	0
26 Feb 03	26 Feb 03	Alice Springs Balloon Launching Station	Alice Springs, Australia	24	0	0

A301. NIGHTGLOW: Student Support

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: The team was in Alice Springs, Australia, for the NIGHTGLOW balloon campaign. The team answered questions from students, took pictures, kept field journals, and wrote about Australian wildlife, culture, and vehicles used in the campaign. A question and answer time was coordinated, and activities were posted on the mission Web site.

Lead: Dr. Louis Barbier, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: Imb@cosmicra.gsfc.nasa.gov. Phone: 301-286-4054.

Primary URL: http://nightglow.gsfc.nasa.gov/campaign_2003.html

Scientist(s): Dr. Eric Christian NASA Office of Space Science Washington, DC
Ms. Beth Jacob NASA Goddard Space Flight Center Greenbelt, MD
Mr. Scott Murphy NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
31 Dec 02	18 Mar 03	Old Bridge High School	Old Bridge, NJ	103	0	0
31 Dec 02	18 Mar 03	Trinity School	Ellicott City, MD	41	0	0

A302. NIGHTGLOW: Support of PREP Student Balloon Launch

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: The Pre-engineering Program (PREP) is for students who meet specific grade and attendance requirements. This summer program includes math, science, tech writing, and other activities including weekly field trips to local science attractions. Four engineering mentors were involved with this program. As part of a special project on high-altitude balloon launches, NIGHTGLOW donated part of the camera payload and the student balloon payload as a vehicle for experimental activities.

Lead: Mr. Robert Hull, New Mexico State University, Las Cruces, Las Cruces, NM 88003. E-mail: rhull@nmsu.edu. Phone: 505-646-1556.

Primary URL: <http://spacegrant.nmsu.edu>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Jun 03	25 Jul 03	New Mexico State University, Las Cruces	Las Cruces, NM	20	0	0

A303. Polar Mesospheric Clouds in the Classroom

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: When viewed from the ground, polar mesospheric clouds (PMCs) appear in reflected sunlight against the dark twilight sky. These sightings can be brilliant, and ground-based observers call them noctilucent or "night-shining" clouds. A recent report shows that the number of PMC sightings has increased by 100 percent during the past 35 years. Since PMCs respond in an unambiguous way to their environment, changing PMC patterns provide a readily observable indication of global climate change. While PMCs are of great interest to scientists, we recognize the curiosity of average citizens. Thus, we propose a program to educate high school students and teachers about PMCs and involve them in PMC observations. We will work directly with our local high school in Driggs, Idaho, but will also make our program publicly available through the Internet. Education will be accomplished through guest lectures, Internet tutorials, and by equipping teachers to educate their students. The curriculum will cover basic principals of the atmosphere and PMCs. This material will provide new learning opportunities and challenge students to apply physics and math in different ways. Because hands-on experience can be educational and motivating, we will involve participants in PMC observations. These observations will use digital cameras, which offer a variety of benefits including low cost and simplicity. These observations will provide students with unique opportunities to learn about photography, observing techniques, computers, and the Internet. This project will bring NASA research into the classroom and provide a learning experience that is uncommon for children in rural America.

Lead: Dr. Mark Hervig, GATS, Inc., Driggs, ID 83422. E-mail: m.e.hervig@gats-inc.com. Phone: 208-354-3315.

Contact: Mr. Robert Thompson, GATS, Inc., Driggs, ID 83422. E-mail: R.E.Thompson@larc.nasa.gov. Phone: 757-864-5808.

Primary URL: http://gwest.gats-inc.com/nlc_epo/epo_home_page.html

Scientist(s): Dr. Scott Bailey Hampton University Hampton, VA
Dr. Mark Hervig GATS, Inc. Driggs, ID

Partner(s): Hampton University Hampton, VA
Teton High School Driggs, ID

University of Alaska, Fairbanks

Fairbanks, AK

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Oct 02	16 Oct 02	Teton High School	Driggs, ID	22	0	0
01 Apr 03	13 Jun 03	Teton High School	Driggs, ID	6	0	0
10 Jun 03	20 Jun 03	University of Alaska, Fairbanks	Fairbanks, AK	7	0	0

A304. Project ASTRO: Los Gatos Schools and Los Altos Girl Scouts

Theme(s): ASO, SSE

Msn/Prgm: SOFIA[B26]

Description: Project ASTRO is the Astronomical Society of the Pacific's program to connect scientists and other technical professionals with individual local teachers and classes for mentoring in regards to astronomy and space science information, curricula, materials, and activities. The program in Los Gatos is working with the SOFIA E/PO effort to bring SOFIA science to students.

Contact: Ms. Maureen Savage, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: msavage@mail.arc.nasa.gov. Phone: 650-604-2124.

Primary URL: http://www.astrosociety.org/education/astro/project_astro.html

Scientist(s): Mr. Michael Bennett Astronomical Society of the Pacific San Francisco, CA
 Dr. Jacqueline Davidson Universities Space Research Association Moffett Field, CA
 Ms. Maureen Savage Universities Space Research Association Moffett Field, CA

Partner(s): Astronomical Society of the Pacific San Francisco, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Lexington Elementary School	Los Gatos, CA	31	0	0
14 Nov 02	14 Nov 02	Lexington Elementary School	Los Gatos, CA	31	0	0
19 Feb 03	19 Feb 03	Lexington Elementary School	Los Gatos, CA	27	0	0
03 Mar 03	03 Mar 03	Girl Scout Troop 391	Los Altos, CA	31	0	0
29 May 03	29 May 03	Lexington Elementary School	Los Gatos, CA	31	0	0

A305. RHESSI: Classroom Visits and Student Support

Theme(s): SEC

Msn/Prgm: RHESSI[B102]

Description: RHESSI scientists and E/PO personnel visit classrooms, after-school programs, and other student groups to give talks on the RHESSI mission and its science. During these visits, the classes may participate in various educational activities.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: http://cse.ssl.berkeley.edu/hessi_epo

Scientist(s): Dr. Nahide Craig University of California, Berkeley Berkeley, CA
 Ms. Ruth Paglierani University of California, Berkeley Berkeley, CA
 Ms. Darlene Park University of California, Berkeley Berkeley, CA
 Mr. Igor Ruderman University of California, Berkeley Berkeley, CA
 Mr. Andrew Westphal University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
17 Jun 03	17 Jun 03	Prospect Sierra Elementary School	El Cerrito, CA	26	0	0

A306. Science and Mathematics Achievement Through Research Training (Project SMART)

Theme(s): SEC

Msn/Prgm: ACE[B98], FAST[B99], Cluster II[B108], Polar[B110], Wind[B111], SOHO[B112]

Description: Project SMART uses CLUSTER II data and science to provide exciting research experiences for high school students at a summer institute at University of New Hampshire. Project SMART seeks to challenge, educate,

and motivate talented high school students in science and mathematics, while acquainting them with the education and research environment of a university.

Lead: Dr. Ramona Kessel, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

Ramona.L.Kessel@nasa.gov. Phone: 301-286-6595.

Partner(s): University of New Hampshire, Durham, NH

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Jun 03	30 Jul 03	University of New Hampshire	Durham, NH	20	0	0

A307. SDO: Internships for Students

Theme(s): SEC

Msn/Prgm: SDO[B115]

Description: SDO scientists, engineers, and education personnel facilitate mentoring internships for high school students mentor high school students interested in pursuing science, math, engineering or technological studies. These internships offer students the opportunity to work in a professional environment that provides the challenges necessary for personal enrichment and career growth. Students are responsible for a specific project, keep daily logs, and prepare a final presentation to SDO management as part of their culminating exercises.

Lead: Ms. Emilie Drobnes, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

Emilie@ihy.gsfc.nasa.gov. Phone: 301-286-3146.

Primary URL: <http://sdo.gsfc.nasa.gov>

Scientist(s): Mr. Guilio Rosanova NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Jul 03	29 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	4	0	0

A308. SDO: Public Speaking Engagements and Classroom Visits

Theme(s): SEC

Msn/Prgm: SDO[B115]

Description: SDO scientists and educators visit classrooms, museums, and science centers to increase the understanding of SEC and the SDO mission. Inquiry-based activities, presentations, and hands-on experiences create a rich learning environment for students and the general public.

Lead: Ms. Emilie Drobnes, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

Emilie@ihy.gsfc.nasa.gov. Phone: 301-286-3146.

Primary URL: <http://sdo.gsfc.nasa.gov>

Scientist(s): Mr. Harry Culver NASA Goddard Space Flight Center Greenbelt, MD
 Ms. Paula Everson NASA Goddard Space Flight Center Greenbelt, MD
 Mr. Joe Howard NASA Goddard Space Flight Center Greenbelt, MD
 Ms. Terri Hynson NASA Goddard Space Flight Center Greenbelt, MD
 Ms. Barbara Lambert NASA Goddard Space Flight Center Greenbelt, MD
 Mr. Peter Mule NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Feb 03	21 Feb 03	Resurrection Church	Laurel, MD	6	0	0
01 Apr 03	01 Apr 03	Millersville Elementary School	Millersville, MD	63	0	0
02 May 03	02 May 03	Grace Christian School	Bowie, MD	425	0	0
05 May 03	05 May 03	Mt. Harmony Elementary School	Owings, MD	26	0	0
07 May 03	07 May 03	Plum Point Elementary School	Huntingtown, MD	63	0	0
04 Jun 03	04 Jun 03	Chesapeake Children's Museum	Annapolis, MD	301	34	0
09 Jul 03	09 Jul 03	BroadCreek Scout Reservation	Laurel, MD	11	0	0

A309. SEC Forum: Formal Education Student Support

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], STEREO[B96], FAST[B99]

Description: The SEC Forum supports activities that use Sun-Earth Connection missions, facilities, personnel, and programs

to provide information, experiences, and research opportunities for students to enhance their knowledge and skills in science, mathematics, engineering, and technology.

Lead: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Contact: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Scientist(s):	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
	Mr. Donald Robinson-Boonstra	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 May 03	01 May 03	Atholton Elementary School	Crofton, MD	16	0	0
13 May 03	14 May 03	Our Savior Lutheran School	Laurel, MD	46	0	0
15 Jul 03	15 Jul 03	University of California, Berkeley	Berkeley, CA	18	0	0

A310. Shorefest School Visits

Theme(s): SSE

Msn/Prgm: Cassini/Huygens Probe[B37], Galileo[B38], MER[B42], DPSO[B49]

Description: NASA Jet Propulsion Laboratory (JPL) provided guest speakers to talk to high school students at Jordan High School in Long Beach, CA about the Centennial of Flight/NASA exhibit at Shorefest, a large multiple-venue community festival planned in Long Beach. The speakers gave some background on NASA and JPL, including the early unmanned missions and the Apollo flights to the Moon, missions with exciting activities happening in 2004, the many types of people and careers it takes to get a spacecraft launched, and the teamwork that is essential for mission success. The presentation concluded with a discussion of space flight spinoffs show the relevance of NASA to our every day lives.

Lead: Ms. Shari Asplund, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shari.e.asplund@jpl.nasa.gov. Phone: 818-354-7280.

Scientist(s):	Ms. Shari Asplund	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Anita Sohus	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Sep 03	30 Sep 03	Jordan High School	Long Beach, CA	337	0	0

A311. Solar System Exploration (SSE) Forum Summer E/PO Intern Program

Theme(s): SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12]

Description: In 2000, the SSE Forum began a program of summer internship opportunities for undergraduate students to provide an opportunity for hands-on experience in education studies, research, and applications. The internships are designed for students with technical majors and targeted for female and/or minority students. Students are recruited through existing NASA student internship programs, such as the NASA Undergraduate Student Research Program and the Caltech Student Undergraduate Research Fellowship. Through our mentoring, we encourage the philosophy that every scientist and engineer is a lifelong educator. To date, student activities have included the following: studies on the use of CDROMs in the K-12 classroom, resulting in a refereed publication (Knudsen, 2003); a survey of K-12 tools for manipulating image data; on-line homework helper design; and user placement of NASA space science education products on the science standards "Quilt". The four participating students in the first three summers of the program, all female and two of them Hispanic, have continued to pursue careers in science, technology, engineering, and mathematics (STEM) areas, except for Rebecca Knudsen, who has joined the SSE Forum staff as our resident researcher. Another student has stated that her participation in the program solidified her desire to be a high-school physics teacher. The program has shown tremendous evidence of moving students toward STEM careers in which they are continual advocates of E/PO.

Lead: Ms. Leslie Lowes, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Leslie.L.Lowes@jpl.nasa.gov. Phone: 818-393-7734.

Scientist(s): Dr. Rosaly Lopes NASA Jet Propulsion Laboratory Pasadena, CA
Dr. Ellis Miner NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Jun 03	26 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	4	0	0

A312. "Sounds of Plasma Waves in Space"

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: This presentation gave participants a chance to learn about space research being done at the University of Iowa and featured information on a number of missions, including Cassini, Galileo, Cluster, and Polar. The talk also included a discussion of the "Sounds of Space."

Lead: Dr. William Kurth, University of Iowa, Iowa City, IA 52242. E-mail: william-kurth@uiowa.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Nov 02	25 Nov 02	Coralville Central Elementary School	Coralville, IA	26	0	0

A313. "Space Physics Research at the University of Iowa"

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: This presentation gave participants a chance to learn about the space research being done at the University of Iowa and featured information on a number of missions, including Cassini, Cluster, and Polar. The talk also included a discussion of the "Sounds of Space."

Lead: Dr. George Hospodarsky, University of Iowa, Iowa City, IA 52242. E-mail: george-hospodarsky@uiowa.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Nov 02	08 Nov 02	Lakeview Elementary School	Solon, IA	100	0	0
07 Feb 03	07 Feb 03	University of Iowa	Iowa City, IA	21	0	0

A314. Spitzer Space Telescope: Classroom Visits

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: Spitzer scientists spend time in classrooms to explain infrared science and give infrared camera demonstrations.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

Scientist(s): Ms. Tatiana Goldina California Institute of Technology Pasadena, CA
Ms. Linda Hermans California Institute of Technology Pasadena, CA
Dr. Michelle Thaller California Institute of Technology Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Feb 03	15 Feb 03	Sacred Hearts Academy	Honolulu, HI	1075	0	0
06 Mar 03	06 Mar 03	Loyola High School	Los Angeles, CA	103	0	0
09 Apr 03	09 Apr 03	Pinecrest School	Thousand Oaks, CA	63	0	0
21 Apr 03	21 Apr 03	Arroyo Vista Elementary School	South Pasadena, CA	31	0	0
29 Apr 03	29 Apr 03	Arroyo Vista Elementary School	South Pasadena, CA	31	0	0
05 May 03	05 May 03	South Pasadena Middle School	South Pasadena, CA	212	0	0

A315. Spitzer Space Telescope: Curriculum Materials Distribution

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: Materials are mailed directly from the Spitzer Science Center to members of the public, per their request. The

estimates below reflect the number of students who used Spitzer materials distributed in the Invisible Light GEMS Guide produced by the Lawrence Hall of Science.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

Primary URL: <http://coolcosmos.ipac.caltech.edu>

Scientist(s):	Mr. Charles Bluehawk	California Institute of Technology	Pasadena, CA
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Ms. Linda Hermans	California Institute of Technology	Pasadena, CA
	Dr. Robert Hurt	California Institute of Technology	Pasadena, CA
	Mr. James Keller	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	California Institute of Technology	Pasadena, CA	0	60,685	0
01 Oct 02	30 Sep 03	Lawrence Hall of Science	Berkeley, CA	50,000	0	0

A316. Stardust Formal Education

Theme(s): SSE

Msn/Prgm: Stardust[B56]

Description: The Stardust mission primarily focuses on grades 5-8, but also develops education curriculum that can be adapted to lower and higher levels. Primary formal education for the Stardust mission is supported through contracts with the NASA Jet Propulsion Laboratory Solar System Educator Program, Challenger Centers, and attendance at at least six educational conferences throughout the United States on a yearly basis. These activities and partnerships include educator training, distribution of curriculum focusing on comets and the mission, and presentations to educators and students about the excitement of space exploration and the technologies which are needed to get to space.

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

Primary URL: <http://stardust.jpl.nasa.gov/classroom>

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 Sep 02	29 Sep 03	Challenger Learning Center	Peoria, AZ	3,000	0	0
09 Jan 03	09 Jan 03	Pinon Unified School District	Pinon, AZ	736	0	0

A317. STARLAB Portable Planetarium Regional Loan Program

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: The STARLAB Portable Planetarium Regional Loan Program allows regional educators and scientists to borrow the SERCH-owned STARLAB for educational use in area schools, home-school events, informal venues, and public outreach events. The borrower agrees to match their STARLAB program efforts to their state's science, math, and/or technology standards. Similarly, they agree to use the STARLAB to address the goals of SERCH, OSS, and NASA E/PO. Through this grass-roots effort, interest will be generated in space science education.

Lead: Dr. Cassandra Runyon, College of Charleston, Charleston, SC 29424. E-mail: cass@cofc.edu. Phone: 843-953-8279.

Contact: Ms. Kathryn Guimond, College of Charleston, Charleston, SC 29424. E-mail: serch@cofc.edu. Phone: 843-953-5437.

Primary URL: <http://serch.cofc.edu/serch>

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Fan Mountain Observatory	Charlottesville, VA	0	125	0
07 Oct 02	07 Oct 02	Peak View Elementary School	Penn Laird, VA	0	40	0
22 Nov 02	22 Nov 02	Fulks Run Elementary School	Fulks Run, VA	0	35	0
14 Dec 02	14 Dec 02	Harrisonburg High School	Harrisonburg, VA	2	18	0
13 Feb 03	13 Feb 03	Thomas Harrison Middle School	Harrisonburg, VA	0	50	0

17 Feb 03	17 Feb 03	Stone Spring Elementary School	Harrisonburg, VA	0	75	0
03 Mar 03	03 Mar 03	Criglersville Elementary School	Madison, VA	0	85	0
14 Mar 03	14 Mar 03	Ottobine Elementary School	Dayton, VA	0	20	0
20 Mar 03	20 Mar 03	Home School Group	Penn Laird, VA	0	17	0
04 Apr 03	04 Apr 03	Fan Mountain Observatory	Charlottesville, VA	0	130	0
04 Apr 03	04 Apr 03	Montevideo Middle School	Penn Laird, VA	0	25	0
05 Apr 03	05 Apr 03	Massanutten Regional Library	Harrisonburg, VA	0	50	0
11 Apr 03	11 Apr 03	South River Elementary School	Grottoes, VA	0	20	0
17 Apr 03	17 Apr 03	Montevideo Middle School	Penn Laird, VA	0	25	0
18 Apr 03	18 Apr 03	Montevideo Middle School	Penn Laird, VA	0	25	0
26 Apr 03	26 Apr 03	Peak View Elementary School	Penn Laird, VA	0	75	0
02 May 03	02 May 03	Plain Elementary School	Timberville, VA	0	80	0
17 Jul 03	18 Jul 03	Harrisonburg Children's Museum	Harrisonburg, VA	0	45	0

A318. STEREO/IMPACT: Classroom Visits and Student Support

Theme(s): SEC

Msn/Prgm: STEREO[B96]

Description: STEREO/IMPACT personnel participate in E/PO activities by visiting school classrooms or student groups to give lectures or lessons related to STEREO mission science.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: <http://cse.ssl.berkeley.edu/impact>

Scientist(s): Ms. Amy Shutkin University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Mar 03	18 Mar 03	Prospect Sierra Elementary School	El Cerrito, CA	23	0	0

A319. Student Observation Network (SON)

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], TIMED[B97], ACE[B98], IMAGE[B100], RHESSI[B102], TRACE[B106], Polar[B110], Wind[B111], SOHO[B112]

Description: The purpose of SON is to involve students in the discovery of NASA SEC missions and provide the context by which missions tell their interrelated stories. SON integrates the central goal of the SEC theme into inquiry-based activities. The goal, to understand the Sun, heliosphere, and planetary environments as a single connected system, is explored by engaging students in the investigation of the essential question, "How do we know when the next solar storm will affect Earth?" Students are engaged in observing or measuring significant phenomena, interpreting observations and measurements, predicting effects, explaining the evidence for their predictions, comparing their results to real NASA data, and reporting results to the SON. Students from all over the world can put the pieces of the puzzle together to understand space weather and its importance. SON provides the theme that unites many classroom objectives that are often taught in isolation, and thereby promotes inquiry. While the essential question and the four subquestions are provided, students will develop their own questions as they proceed with the investigation (e.g., "Why does the Sun form sunspots?", "How big are sunspots?", "How can we tell if the radio signal came from the sunspot we predicted?", "What is a magnetic field?").

Lead: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Contact: Mr. Troy Cline, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: cline@mail630.gsfc.nasa.gov. Phone: 301-286-6606.

Primary URL: <http://sunearth.gsfc.nasa.gov/son>

Scientist(s):	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Albert Davison	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. James Green	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Joseph King	NASA Goddard Space Flight Center	Greenbelt, MD

Dr. Therese Kucera	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Barbara Lambert	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Paul Mortfield	Stanford University	Stanford, CA
Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Donald Robinson-Boonstra	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD
Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Nov 02	10 Nov 03	American Indian Science and Engineering Society				
			Oklahoma City, OK	20	0	0
15 Nov 02	16 Nov 02	Alaska Science Center/Education Research Center				
			Anchorage, AK	30	0	0
18 Jan 03	18 Jan 03	NASA Headquarters	Washington, DC	60	0	0
20 Jan 03	20 Jan 03	NASA Goddard Space Flight Center	Greenbelt, MD	15	0	0
25 Jan 03	25 Jan 03	NASA Goddard Space Flight Center	Greenbelt, MD	20	0	0
06 Mar 03	06 Mar 03	Tuttle Middle School	Burlington, VT	128	0	0
07 Mar 03	07 Mar 03	Lyndon State College	Lyndon, VT	40	0	0
13 Mar 03	15 Mar 03	International Technology Education Association Annual Conference				
			Nashville, TN	10	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference				
			Philadelphia, PA	34	0	0
05 Apr 03	05 Apr 03	NASA Goddard Space Flight Center	Greenbelt, MD	60	0	0
10 Apr 03	10 Apr 03	NASA Goddard Space Flight Center	Greenbelt, MD	42	0	0
10 Apr 03	12 Apr 03	National Math Conference	San Antonio, TX	25	0	0
07 May 03	08 May 03	NASA Headquarters	Washington, DC	40	0	0
13 Jul 03	18 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	30	0	0
19 Jul 03	25 Jul 03	NASA Glenn Research Center	Cleveland, OH	31	0	0
26 Jul 03	31 Jul 03	NASA Goddard Space Flight Center	Greenbelt, MD	62	0	0
07 Aug 03	07 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	35	0	0
22 Aug 03	22 Aug 03	North Country Union Junior High School	Derby, VT	42	0	0
08 Sep 03	08 Sep 03	NASA Goddard Space Flight Center	Greenbelt, MD	20	0	0

A320. Students Acquiring Real Science (STARS)

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: STARS is a 1-year project to enrich at-risk grade 6 students from the Hampton school system in an after-school program at the Virginia Air & Space Center (VASC). The after-school program uses science programs and resources at the VASC to engage the students in learning. The Virginia Standards of Learning are addressed in the selection of the integrated (interdisciplinary) programming. We include interactive, hands-on experiences illustrating force, energy and motion, states of matter, technology, community planning, math, and space exploration. The students are provided with four consecutive daily sessions. Themes and program content build on the previous experiences. The daily session is 90 minutes long. Approximately 40 students, selected by Hampton City schools, are served each week. The sessions consist of information sharing, hands-on science experiments, interactive team-building, and problem-solving activities delivered and supervised by VASC museum educators. Sessions include an IMAX film, a guided tour of the exhibits, and a career-awareness encounter with volunteer professionals from a variety of science and technical jobs, including NASA mentors.

Lead: Dr. Richard Byles, Virginia Air and Space Museum, Hampton, VA 23669. E-mail: rbytes@vasc.org. Phone: 757-727-0898.

Contact: Dr. Anne Garland, Virginia Air and Space Museum, Hampton, VA 23669. E-mail: garland@visi.net. Phone: 757-727-0900.

Partner(s): Virginia Space Grant Consortium, Hampton, VA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Oct 02	17 Oct 02	Virginia Air and Space Museum	Hampton, VA	37	0	0
21 Oct 02	24 Oct 02	Virginia Air and Space Museum	Hampton, VA	29	0	0
28 Oct 02	31 Oct 02	Virginia Air and Space Museum	Hampton, VA	30	0	0
11 Nov 02	14 Nov 02	Virginia Air and Space Museum	Hampton, VA	41	0	0
18 Nov 02	21 Nov 02	Virginia Air and Space Museum	Hampton, VA	27	0	0
02 Dec 02	05 Dec 02	Virginia Air and Space Museum	Hampton, VA	28	0	0

A321. Sun-Earth Connection (SEC) Classroom Visits

Theme(s): SEC

Msn/Prgm: Polar[B110], Wind[B111]

Description: Wind and Polar mission scientists shared the scientific discoveries of these missions with students. Many educators make special requests to have a scientist in their classroom in order to enrich the science curriculum and motivate students by discussing new scientific discoveries and the careers available to them.

Lead: Dr. Nicola Fox, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: foxnj1@jhuapl.edu.Primary URL: <http://www-istp.gsfc.nasa.gov/istp/wind>2nd URL: <http://www-istp.gsfc.nasa.gov/istp/polar>

Scientist(s): Dr. Ronald Lepping NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Mar 03	18 Mar 03	NASA Goddard Space Flight Center	Greenbelt, MD	34	0	0

A322. Swift Gamma Ray Burst Mission: High-Energy Student Presentations

Theme(s): SEU

Msn/Prgm: Swift Gamma Ray Burst Mission[B78]

Description: In the program, Swift scientists, educator ambassadors, and E/PO professionals present interactive workshops with students using educational materials originated by the Swift E/PO team. The presentations typically contain information about the Swift satellite, gamma-ray bursts, and the electromagnetic spectrum.

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.Primary URL: <http://swift.sonoma.edu>2nd URL: <http://swift.sonoma.edu/program.html>

Scientist(s): Dr. Neil Gehrels NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Nov 02	19 Nov 02	Arthur Slade Catholic School	Glen Burnie, MD	50	0	0

A323. Swift Television: "What's in the News?"

Theme(s): SEU

Msn/Prgm: Swift Gamma Ray Burst Mission[B78]

Description: The Swift Gamma Ray Burst Mission facilitates informal education through segments on the television show "What's in the News?", produced by the Penn State public broadcasting station, WPSX. Each year several new television segments sponsored by Swift are written, reviewed by Swift E/PO, and then produced and aired to middle school students across the country.

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.Primary URL: <http://swift.sonoma.edu>2nd URL: <http://www.witn.psu.edu/index.phtml>Scientist(s): Dr. Philip Plait Sonoma State University Rohnert Park, CA
Partner(s): Pennsylvania State University University Park, PA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Mar 03	21 Mar 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	5,000,000	0
04 Apr 03	04 Apr 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	5,000,000	0
02 May 03	02 May 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	5,000,000	0
09 May 03	09 May 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	5,000,000	0

A324. TIMED Student Support

Theme(s): SEC, SSE

Msn/Prgm: MESSENGER[B54], STEREO[B96], TIMED[B97]

Description: The TIMED mission is currently studying the influences of the Sun and humans on the least explored and understood region of Earth's atmosphere, the Mesosphere and Lower Thermosphere/Ionosphere (MLTI). The MLTI region is a gateway between Earth's environment and space, where the Sun's energy is first deposited into Earth's environment. TIMED focuses on the portion of this region located approximately 60–180 kilometers above the surface. From studying portions of Earth's atmosphere, scientists believe global change is occurring, primarily due to variations in the Sun's cycle and to the human-induced release of gases such as methane and carbon dioxide into this atmosphere. The TIMED E/PO Web site offers activities, a Teacher's Corner, and TIMED lesson plans.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Contact: Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.

Primary URL: <http://www.timed.jhuapl.edu>2nd URL: <http://www.spaceacademy.jhuapl.edu>

Scientist(s):	Ms. Terry Betenbaugh	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Ms. Alice Bowman	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Mike Buckley	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Marc Clayton	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Carl Ercol	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Robert Erlandson	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Karl Fielhauer	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. John Goldsten	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Bill Knopf	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Andrew Santo	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Elsayed Talaat	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. Cliff Willey	Johns Hopkins Applied Physics Laboratory	Laurel, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Oct 02	21 Oct 02	Gage-Eckington Elementary School	Washington, DC	57	0	0
21 Oct 02	21 Oct 02	Montgomery Elementary School	Washington, DC	42	0	0
29 Oct 02	29 Oct 02	Martin Luther King Middle School	Beltsville, MD	37	0	0
01 Nov 02	01 Nov 02	Longfellow Elementary School	Columbia, MD	72	0	0
08 Jan 03	08 Jan 03	Fountain Green Elementary School	Bel Air, MD	124	0	0
09 Jan 03	09 Jan 03	Arlington Echo Outdoor Education Center	Millersville, MD	28	0	0
21 Feb 03	21 Feb 03	Villanova University	Villanova, PA	32	0	0
24 Apr 03	24 Apr 03	Davidson Elementary School	Davidsonville, MD	103	0	0
30 Apr 03	30 Apr 03	Fulton Elementary School	Fulton, MD	21	0	0
13 May 03	13 May 03	Lime Kiln Middle School	Fulton, MD	152	0	0
12 Jun 03	12 Jun 03	Brown Memorial Weekday School	Baltimore, MD	0	0	0

A325. Tour of University of Iowa Department of Physics and Astronomy

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: A group of enthusiastic local high school students were given an opportunity to visit the University of Iowa's Department of Physics and Astronomy. This 4-hour tour included science demonstrations and short tutorials on

the work performed in the department.

Lead: Mr. Dale Stille, University of Iowa, Iowa City, IA 52242. E-mail: dale-stille@uiowa.edu. Phone: 319-335-1833.

Scientist(s): Dr. John Sigwarth University of Iowa Iowa City, IA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Oct 02	25 Oct 02	University of Iowa	Iowa City, IA	13	0	0

A326. "University of Iowa Space Research: Past, Present, and Future"

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: This talk gave students and members of the general public a chance to learn about space physics research being conducted at the University of Iowa. Participants were provided with information on the history of the Space Physics department. A number of missions were discussed, including Cassini, Galileo, Cluster, and Polar. Participants also had a chance to learn about and listen to the "Sounds of Space."

Lead: Dr. George Hospodarsky, University of Iowa, Iowa City, IA 52242. E-mail: george-hospodarsky@uiowa.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 May 03	02 May 03	Whittier Elementary School	Clinton, IA	131	0	0
05 Jul 03	06 Jul 03	Eastern Iowa Airport	Cedar Rapids, IA	0	500	0

A327. Voyager Classroom Visits

Theme(s): SEC

Msn/Prgm: Voyager[B90]

Description: Voyager team members visit local elementary, junior, and senior high schools.

Lead: Dr. Andrea Angrum, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: andrea.angrum@jpl.nasa.gov. Phone: 818-354-6775.

Scientist(s): Mr. Jonathan Criss NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Apr 03	25 Apr 03	East Picacho Elementary School	Las Cruces, NM	23	0	0

A328. "What is Your Cosmic Connection to the Elements?": Student Presentation

Theme(s): SEU

Msn/Prgm: HEASARC[B81]

Description: A 20-minute presentation on our connection to the elements, including a description of the cosmic processes that give rise to the elements. Also included was a student survey of the "Cosmic Connection" poster.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

Scientist(s): Mr. Dennis Christopher NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Mar 03	03 Mar 03	Chesapeake Senior High School	Pasadena, MD	31	0	0
04 Mar 03	04 Mar 03	Northeast Middle School	Reading, PA	93	0	0
04 Mar 03	04 Mar 03	Northwest Middle School	Reading, PA	93	0	0
05 Mar 03	05 Mar 03	Chesapeake Senior High School	Pasadena, MD	51	0	0

A329. WMAP Cooperative Satellite Learning Project (CSLP)

Theme(s): SEU

Msn/Prgm: WMAP[B79]

Description: Wilkinson Microwave Anisotropy Probe (WMAP) staff worked with Old Bridge High School throughout the year by providing human, electronic, and curricular resources for the CSLP program. The objectives of CSLP are to motivate students in the K-12 system to pursue science, engineering, and math and careers in the space business. CSLP also demonstrates the application of technology and the integration of a variety of technical

disciplines into a complex system of ground- and space-based segments called the "end-to-end" mission system. Further, through special projects performed by small, focused student groups, the participants learn such skills as leadership, planning, organization, speech and presentation, and group interaction.

Lead: Dr. David Spergel, Princeton University, Princeton, NJ 08544-1001. E-mail: dns@astro.princeton.edu. Phone: 609-258-3589.

Primary URL: <http://map.gsfc.nasa.gov>

2nd URL: <http://clsp.gsfc.nasa.gov>

Scientist(s): Ms. Lindsay Bartolone Adler Planetarium and Astronomy Museum Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 May 03	15 May 03	Princeton University	Princeton, NJ	33	0	0

Public Outreach

A330. 4-H Youth Development Program: NASA OSS E/PO Collaboration

Theme(s): SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], Mars E/PO[B40], Deep Impact[B51], Astromaterials Program[B57]

Description: We are building a relationship we are building with the 4-H Youth Development Program across the country. We will start working the 4-H national conferences and through the Girl Scouts of the USA (GSUSA). Thirty-three GSUSA councils have a partnership with 4-H and the USDA. We will focus on these 33 councils for training and other purposes.

Lead: Ms. Rosalie Bettrue, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rosalie.Bettrue@jpl.nasa.gov. Phone: 818-393-5388.

Scientist(s): Ms. Sheri Klug Arizona State University Tempe, AZ

Partner(s): Arizona State University Tempe, AZ
NASA Johnson Space Center Houston, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
26 Oct 02	27 Oct 02	4-H National Agent Conference	Norfolk, VA	18	2,400	0
22 Sep 03	24 Sep 03	4-H National Conference: Galaxy II	Salt Lake City, UT	0	1,100	0

A331. A Star in Our Neighborhood

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: This Chandra Cycle 4 E/PO program primarily addresses the underserved population in the western areas of Wisconsin. Funds from the grant were used to purchase solar telescopes that could be used for day viewing. Three preliminary public lectures were held: two in the Eau Claire area and one at the Space Place in Madison, WI each reaching an audience of approximately 40-50 people. Topics included recent Chandra discoveries with relevance to the follow-on solar viewing. Three subsequent viewing sessions took place in conjunction with the University of Wisconsin (UW)-Eau Claire Summer Science Institute and the UW-Extension program, the Northwoods Starfest at Beaver Creek Reserve State Park, and a science day at Brunet Island State Park. These activities reached an additional 136 people, ranging from families to amateur astronomers to 12-to-14-year-old students. There are plans to extend the activity to additional state parks.

Lead: Dr. Nathan Miller, University of Wisconsin-Eau Claire, Eau Claire, WI 54703. E-mail: millerna@uwec.edu. Phone: (715) 836-3165.

Scientist(s): Dr. Joseph Cassinelli University of Wisconsin-Madison Madison, WI
Dr. Nathan Miller University of Wisconsin-Eau Claire Eau Claire, WI

Partner(s): University of Wisconsin-Madison Madison, WI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Jan 03	18 Jan 03	Beaver Creek Reserve	Fall Creek, WI	0	52	0
14 Feb 03	14 Feb 03	University of Wisconsin-Madison	Madison, WI	0	40	0
10 May 03	10 May 03	University of Wisconsin-Eau Claire	Eau Claire, WI	0	50	0
16 Jun 03	27 Jun 03	University of Wisconsin-Eau Claire	Eau Claire, WI	12	0	0

02 Aug 03	02 Aug 03	Beaver Creek Reserve	Fall Creek, WI	0	100	0
08 Aug 03	08 Aug 03	Brunet Island State Park	Cornell, WI	0	12	0

A332. ACE Public Outreach Talks

Theme(s): SEC

Msn/Prgm: ACE[B98]

Description: The ACE mission provides a number of E/PO talks throughout the year on such subjects as "Galactic Cosmic Rays," "Samples of Matter from the Galaxy," "Space Weather and Ace," and "The Edge of the Solar System—Voyager Mission."

Lead: Ms. Beth Jacob, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: beth@milkyway.gsfc.nasa.gov. Phone: 301-286-7209.

Scientist(s):	Dr. W. Robert Binns, Washington University	St. Louis, MO
	Dr. Eric Christian	NASA Office of Space Science Washington, DC
	Ms. Beth Jacob	NASA Goddard Space Flight Center Greenbelt, MD
	Mr. Koji Mukai	NASA Goddard Space Flight Center Greenbelt, MD
	Dr. David Thompson	NASA Goddard Space Flight Center Greenbelt, MD
	Dr. Robert Wimmer-Schweingruber	
		Universitat zu Kiel Kiel, Germany
	Dr. Edward Wollack	NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Oct 02	03 Oct 02	Sternberg Natural History Museum	Hays, KS	0	40	0
30 Nov 02	30 Nov 02	Universitat zu Kiel	Kiel, Germany	207	0	0
28 Feb 03	28 Feb 03	Spring Hill Elementary School	Spring Hill, KS	31	0	0
11 Mar 03	11 Mar 03	Retired Ozark Airlines Association	St. Louis, MO	20	0	0
26 Jun 03	26 Jun 03	Norfolk State University	Norfolk, VA	47	0	0

A333. African American Space Scientists Exhibit

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: The African American Space Scientists exhibit is a portable display featuring profiles on the lives and careers of prominent African American space scientists. It was developed by the Ohio Space Grant and made available by the S2N2 B/F for events in the Seattle area. S2N2 brought the exhibit to the American Astronomical Society (AAS) meeting in Seattle in order to interest astronomers in bringing the exhibit to their own regions and also to highlight the accomplishments of minority scientists and the dearth of minorities choosing careers in space sciences. Posters of the exhibit were made available for AAS participants, as was information about the OSS E/PO support network and the services of S2N2. The African American Space Scientist exhibit also was displayed at the African American Academy, a K-8 public school in Seattle. In conjunction with the exhibit, S2N2 provided teachers with space science and other NASA education materials for use in their classrooms.

Lead: Dr. Julie Lutz, University of Washington, Seattle, WA 98195. E-mail: nasaerc@u.washington.edu. Phone: 206-543-0214.

Partner(s): Ohio Space Grant Consortium, Cleveland, OH

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	485	0
13 Jan 03	17 Jan 03	African American Academy	Seattle, WA	0	270	0

A334. Air Expo for the Public (Moffett Field Air Show)

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: NASA Ames Research Center annually co-hosts a 2-day public air show at Moffett Federal Airfield. Attendees include tourists, families, individuals, and NASA employees and contractors. There is an admission charge; the air show is produced by a private group in cooperation with NASA Ames.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Primary URL: <http://education.arc.nasa.gov>

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Ms. Marita Beard	SETI Institute	Mountain View, CA
	Dr. Eric Becklin	NASA Ames Research Center	Moffett Field, CA
	Dr. Jacqueline Davidson	Universities Space Research Association	Moffett Field, CA
	Dr. Ann Dinger	NASA Ames Research Center	Moffett Field, CA
	Ms. Pamela Harman	SETI Institute	Mountain View, CA
	Mr. Nans Kunz	NASA Ames Research Center	Moffett Field, CA
	Mr. Allan Meyer	Universities Space Research Association	Moffett Field, CA
	Ms. Leslie Proudfit	NASA Ames Research Center	Moffett Field, CA
	Mr. Hank Remmers	NASA Ames Research Center	Moffett Field, CA
	Mr. Eric Wang	Universities Space Research Association	Moffett Field, CA
	Dr. Juergen Wolf	NASA Ames Research Center	Moffett Field, CA
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
13 Sep 03	14 Sep 03	NASA Ames Research Center	Moffett Field, CA	0	1,000	0

A335. Amateur Astronomy Club Activity

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: LISA[B70]

Description: So far, 157 community-based amateur astronomy clubs—located across the nation, and including several in Canada, England, and New Zealand—have signed on to receive our monthly column for their newsletters. This is a product especially designed for this adult audience, and they have been very appreciative of our contributions.

Contact: Ms. Liliana Novati, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Liliana.Novati@jpl.nasa.gov. Phone: 818-354-1486.

Primary URL: <http://spaceplace.nasa.gov>

2nd URL: <http://spaceplace.jpl.nasa.gov>

Scientist(s):	Ms. Diane Fisher	NASA Jet Propulsion Laboratory	Pasadena, CA
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Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Nov 02	28 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	157	0

A336. Ames Research Center: SOFIA Exhibit

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: The SOFIA E/PO program worked with the SOFIA project office and the Public Affairs Office at NASA's Ames Research Center (ARC) to develop an interactive SOFIA exhibit for the ARC visitors' center. The exhibit features the wind-tunnel model of SOFIA that was used to test the cavity door designs during the mission's development. Visitors are able to operate the door and to learn more about the technology, engineering, and science of SOFIA from the wall panels that accompany the exhibit. The exhibit opened in December 2001 and is available to the public and school groups during business hours at the Ames Research Center Visitor Center.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Contact: Ms. Leslie Proudfit, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: lwolber@mail.arc.nasa.gov. Phone: 650-604-2125.

Primary URL: <http://education.arc.nasa.gov>

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA Ames Research Center	Moffett Field, CA	0	33,620	0

A337. Astrobiology Guest Speaker Series

Theme(s): ASO

Msn/Prgm: NESSIE B/F[B18], KECK[B28]

Description: In collaboration with the Current Science and Technology Center at the Museum of Science, Boston, the KECK/IOTA E/PO team presented a lecture series on astrobiology. During the nine events, we explored the fundamental questions addressed by astrobiology: "How does life begin and evolve?" "Is there life elsewhere in the Universe?" "What is the future of life on Earth and beyond?" Our speakers talked about the odds of finding life in our Solar System; what conditions life requires to develop, even in the harshest environments; how we look for planets in other solar systems; and how new planets are born. The overview of all the major areas encompassed by a new and fascinating discipline such as astrobiology was extremely welcomed by our audiences and generated genuine enthusiasm.

Lead: Dr. Irene Porro, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

Primary URL: <http://cfa-www.harvard.edu/cfa/oir/IOTA>

Scientist(s):	Dr. Ray Jayawardhana	University of Michigan	Ann Arbor, MI
	Dr. Andrew Knoll	Harvard University	Cambridge, MA
	Dr. Marc Kuchner	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Rafael Millan-Gabet	California Institute of Technology	Pasadena, CA
	Dr. E. Samuel Palmer	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Tania Ruiz	Museum of Science	Boston, MA
	Dr. F. Peter Schloerb	University of Massachusetts	Amherst, MA
	Dr. Nicole Spaun	NASA Ames Research Center	Moffett Field, CA
	Dr. Andreas Teske	Marine Biological Laboratory	Woods Hole, MA
	Dr. Wesley Traub	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
Partner(s):	Museum of Science		Boston, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Oct 02	11 Oct 02	Museum of Science	Boston, MA	0	90	0
18 Oct 02	18 Oct 02	Museum of Science	Boston, MA	0	120	0
25 Oct 02	25 Oct 02	Museum of Science	Boston, MA	0	115	0
01 Nov 02	01 Nov 02	Museum of Science	Boston, MA	0	105	0
08 Nov 02	08 Nov 02	Museum of Science	Boston, MA	0	100	0
15 Nov 02	15 Nov 02	Museum of Science	Boston, MA	0	95	0
22 Nov 02	22 Nov 02	Museum of Science	Boston, MA	0	120	0
29 Nov 02	29 Nov 02	Museum of Science	Boston, MA	0	100	0
06 Dec 02	06 Dec 02	Museum of Science	Boston, MA	0	130	0

A338. Astronomy at 41,000 Feet—The Story of SOFIA

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: "Astronomy at 41,000 Feet—The Story of SOFIA" is a presentation for the general public about the SOFIA program. In early 2005, the largest airborne telescope ever built will begin making astronomical observations. The SOFIA telescope has a primary mirror with a diameter of 2.5 meters (nearly 100 inches) and will view the universe from an open cavity built into a modified Boeing 747-SP. SOFIA will make astronomical observations up to 200 nights per year from an altitude of 41,000 feet that are impossible for any other telescope, whether on a mountain top or in space. The presentation covers the nature of infrared radiation; why astronomers want to study the infrared energy that many objects in space emit; why these studies need to be conducted from a high-flying aircraft; the engineering feat of modifying a 747 to carry a 100-inch telescope; and the story behind the technology that allows astronomers to overcome the effect of the aircraft's slipstream and vibrations to, as one astronomer put it, "use a telescope in an earthquake during a hurricane." A special version of the same presentation is pitched to amateur astronomers, encouraging them to do public outreach for SOFIA and other NASA missions.

Lead: Mr. Michael Bennett, Astronomical Society of the Pacific, San Francisco, CA 94112. E-mail: mbennett@astrosciety.org. Phone: 415-337-1100.

Primary URL: http://sofia.arc.nasa.gov/Edu/calendar/edu_calendar.html

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Mr. Nans Kunz	NASA Ames Research Center	Moffett Field, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Nov 02	21 Nov 02	Maryland Science Center	Baltimore, MD	40	0	0
25 Feb 03	25 Feb 03	Bucknell University	Lewisburg, PA	20	50	0
13 Mar 03	13 Mar 03	Reading Public Museum	Reading, PA	0	30	0
01 Jul 03	01 Jul 03	NASA Ames Research Center	Moffett Field, CA	8	0	0
29 Jul 03	29 Jul 03	NASA Ames Research Center	Moffett Field, CA	20	0	0
18 Sep 03	20 Sep 03	Astrofest	Manteno, IL	0	200	0

A339. Astronomy Camp for Girl Scout Leaders

Theme(s): ASO

Msn/Prgm: JWST[B23]

Description: The first Astronomy Camp was held at Mt. Lemmon Observatory by JWST scientists. Participants included 20 Girl Scout leaders. The agenda included activities relating to scale modeling, estimation, classification, and telescopic observing. The participants also hiked the "Solar System" to scale covering about two miles through the pine forest on Mt. Lemmon.

Lead: Ms. Peg Stanley, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: pstanley@stsci.edu. Phone: 410-338-4536.

Scientist(s):	Dr. Larry Lebofsky	University of Arizona	Tucson, AZ
	Dr. Don McCarthy	University of Arizona	Tucson, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Apr 03	06 Apr 03	Sahuaro Girl Scout Council	Tucson, AZ	20	0	0

A340. "Astronomy Spectrum of the Week": A Dynamic, Online Database for Astrophysical Spectroscopy

Theme(s): SEU

Msn/Prgm: SRT[B3]

Description: We are constructing a Web site called "Astronomy Spectrum of the Week" based on the award-winning and extremely popular "Astronomy Picture of the Day" Web site. Each week, an astrophysical spectrum is placed on the Web site, together with a short description of the nature and scientific importance of the spectrum. The image of the spectrum has hot links so that users can learn how different spectral features tell us about the nature of the astrophysical source. As is the case for "Astronomy Picture of the Day," we will build a searchable database of all the spectra that have appeared on the site.

Lead: Dr. Robert Benjamin, University of Wisconsin-Whitewater, Whitewater, WI 53190. E-mail: benjamin@uww.edu. Phone: 262-472-5114.

Primary URL: <http://spectrum.physics.uww.edu>

Scientist(s):	Dr. Robert Benjamin	University of Wisconsin-Whitewater	Whitewater, WI
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A341. Author's Nights at the Harvard-Smithsonian Center for Astrophysics

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: "Author's Nights" are free programs at the Harvard-Smithsonian Center for Astrophysics (CfA) offering an opportunity to meet today's top science writers in an intimate setting. CfA invites popular science writers from around the world to put a human face on the scientific endeavor. Recent speakers included Robert Kirshner and Timothy Ferris.

Lead: Mr. David Aguilar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: daguilar@cfa.harvard.edu. Phone: 617-495-7461.

Primary URL: <http://cfa-www.harvard.edu/events.html>

Scientist(s):	Dr. Leon Golub	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
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Dr. Robert Kirshner

Harvard-Smithsonian Center for Astrophysics

Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	08 Oct 02	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	150	0
22 Oct 02	22 Oct 02	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	100	0
23 Oct 02	23 Oct 02	Museum of Science	Boston, MA	0	110	0
12 Nov 02	12 Nov 02	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	150	0
27 Mar 03	27 Mar 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	150	0

A342. Backyard Astronomy

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SERCH B/F[B19]

Description: Backyard Astronomy is an informal series of sessions in astronomy for the public. Each program contains a brief talk followed by planetarium shows or observing sessions.

Lead: Mr. James Hill, Rainwater Observatory and Planetarium, French Camp, MS 39745. E-mail: jhill@astronomers.org. Phone: 662-547-6377.

Primary URL: <http://www.rainwaterobservatory.org>2nd URL: <http://serch.cofc.edu/serch>

Partner(s): Mississippi Space Grant Consortium
NASA Office of Education

University, MS
Washington, DC

A343. Cassini Sky-Watching Events

Msn/Prgm: Cassini/Huygens Probe[B37]

Description: Members of Cassini's Saturn Observation Campaign (SOC) blend information about the mission with actual telescopic observation of Saturn during community events around the world. Members of SOC agree to use their own telescopes and invite members of the public, school groups, and community organizations to witness the ringed world first hand.

Lead: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shannon.mcconnell@jpl.nasa.gov. Phone: 818-393-5815.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Oct 02	15 Oct 02	St. Marks School of Texas	Dallas, TX	57	0	0
01 Nov 02	01 Nov 02	St. Marks School of Texas	Dallas, TX	75	0	0
03 Nov 02	03 Nov 02	Assumption Abbey	Richardton, ND	0	10	0
06 Nov 02	06 Nov 02	Moultrie Boy Scout Camp	Lake Moultrie, SC	0	70	0
07 Nov 02	07 Nov 02	Muncie Astronomy Club	Muncie, IN	26	11	0
09 Nov 02	09 Nov 02	Fishheating Creek Campground	Palmdale, FL	40	50	0
12 Nov 02	12 Nov 02	Wheelerburg Elementary School	Wheelerburg, OH	100	0	0
14 Nov 02	14 Nov 02	Flemming Middle School	Grants Pass, CA	96	0	0
19 Nov 02	19 Nov 02	Minford Middle School	Minford, OH	60	0	0
19 Nov 02	19 Nov 02	Shafer Middle School	Gallatin, TN	58	0	0
22 Nov 02	22 Nov 02	Sugar Sand Community Park	Boca Raton, FL	100	150	0
24 Nov 02	24 Nov 02	Greenbelt Astronomy Club	Greenbelt, MD	25	20	0
02 Dec 02	02 Dec 02	Berean Baptist Church	Sciotoville, OH	40	0	0
04 Dec 02	04 Dec 02	Jones Magnet Middle School	Hampton, VA	12	0	0
06 Dec 02	06 Dec 02	Fiske Planetarium	Boulder, CO	0	250	0
06 Dec 02	06 Dec 02	Makemie Wood Camp and Conference Center	Lanexa, VA	11	0	0
06 Dec 02	06 Dec 02	Spirtridge Elementary School	Bellevue, WA	40	0	0
17 Dec 02	17 Dec 02	Kansas City Starlight User's Group	Kansas City, MO	35	20	0
19 Dec 02	19 Dec 02	New York Hall of Science	New York, NY	0	27	0
19 Dec 02	19 Dec 02	Spirtridge Elementary School	Bellevue, WA	28	0	0
30 Dec 02	30 Dec 02	Newport Way Library	Bellevue, WA	32	0	0
03 Jan 03	03 Jan 03	Wilderness Center Astronomy Club	Wilmot, OH	0	25	0
09 Jan 03	09 Jan 03	Flemming Middle School	Grants Pass, CA	65	0	0
09 Jan 03	09 Jan 03	Hendersonville Public Library	Hendersonville, TN	0	25	0

09 Jan 03	09 Jan 03	Jones Magnet Middle School	Hampton, VA	30	0	0
14 Jan 03	14 Jan 03	Shafer Middle School	Gallatin, TN	30	0	0
16 Jan 03	16 Jan 03	New York Hall of Science	New York, NY	0	35	0
17 Jan 03	17 Jan 03	McKinley Museum	Canton, OH	0	23	0
18 Jan 03	18 Jan 03	St. Marks School of Texas	Dallas, TX	38	0	0
24 Jan 03	24 Jan 03	Virginia Living Museum	Newport News, VA	0	100	0
25 Jan 03	25 Jan 03	University of Redlands	Redlands, CA	20	0	0
28 Jan 03	28 Jan 03	Sommers-Bausch Observatory	Boulder, CO	40	0	0
01 Feb 03	01 Feb 03	Museum of Science and Industry	Tampa, FL	0	80	0
01 Feb 03	01 Feb 03	St. Marks School of Texas	Dallas, TX	42	0	0
03 Feb 03	03 Feb 03	Curtis Middle School	San Bernardino, CA	1,200	0	0
05 Feb 03	05 Feb 03	Curtis Middle School	San Bernardino, CA	500	0	0
06 Feb 03	06 Feb 03	New York Hall of Science	New York, NY	0	32	0
06 Feb 03	06 Feb 03	Wilderness Center Astronomy Club	Wilmot, OH	0	110	0
08 Feb 03	08 Feb 03	Locke Four County Park	Gallatin, TN	0	20	0
11 Feb 03	11 Feb 03	Shafer Middle School	Gallatin, TN	25	0	0
20 Feb 03	20 Feb 03	Newport Way Library	Bellevue, WA	0	42	0
06 Mar 03	06 Mar 03	New York Hall of Science	New York, NY	0	51	0
06 Mar 03	06 Mar 03	Wilderness Center Astronomy Club	Wilmot, OH	0	45	0
07 Mar 03	07 Mar 03	Arthur Purcell Observatory	Tulare, CA	0	30	0
07 Mar 03	07 Mar 03	Moiola Elementary School	Fountain Valley, CA	250	150	0
08 Mar 03	08 Mar 03	Upper Newport Bay Nature Center	Newport Beach, CA	60	9	0
10 Mar 03	10 Mar 03	Glenview Elementary School	Anaheim, CA	100	25	0
11 Mar 03	11 Mar 03	Gilbert Elementary School	Buena Park, CA	100	30	0
13 Mar 03	13 Mar 03	Mabel Paine Elementary School	Yorba Linda, CA	25	20	0
13 Mar 03	13 Mar 03	Mabel Paine Elementary School	Yorba Linda, CA	25	20	0
14 Mar 03	14 Mar 03	New York Hall of Science	New York, NY	0	17	0
15 Mar 03	15 Mar 03	Museum of Science and Industry	Tampa, FL	0	60	0
20 Mar 03	20 Mar 03	Flemming Middle School	Grants Pass, CA	75	0	0
20 Mar 03	20 Mar 03	New York Hall of Science	New York, NY	0	44	0
21 Mar 03	21 Mar 03	Orange Coast College	Costa Mesa, CA	0	250	0
25 Mar 03	25 Mar 03	Newland Elementary School	Huntington Beach, CA	60	15	0
26 Mar 03	26 Mar 03	La Tierra Elementary School	Mission Viejo, CA	150	50	0
28 Mar 03	28 Mar 03	Big Sky Ranch	Glendive, MT	10	0	0
29 Mar 03	29 Mar 03	Grafton Bethel Elementary School	Yorktown, VA	58	0	0
03 Apr 03	03 Apr 03	Turtle Rock Elementary School	Irvine, CA	425	0	0
04 Apr 03	04 Apr 03	Wilderness Center Astronomy Club	Wilmot, OH	0	45	0
10 Apr 03	10 Apr 03	Museum of Science and Industry	Chicago, IL	200	100	0
15 Apr 03	15 Apr 03	Grafton Bethel Elementary School	Yorktown, VA	18	0	0
25 Apr 03	25 Apr 03	Fullerton Museum Center	Fullerton, CA	0	350	0
30 Apr 03	30 Apr 03	New York Hall of Science	New York, NY	0	45	0
09 May 03	09 May 03	Willow Glen Elementary School	Visalia, CA	45	0	0
15 May 03	15 May 03	Willow Glen Park	Visalia, CA	40	0	0
15 May 03	15 May 03	Willow Glen Park	Visalia, CA	40	0	0
30 Aug 03	30 Aug 03	Old Town Pasadena	Pasadena, CA	0	1400	0
15 Oct 03	15 Oct 03	St. Marks School of Texas	Dallas, TX	840	0	0

A344. Cassini Talks

Theme(s): SSE

Msn/Prgm: Cassini/Huygens Probe[B37]

Description: The Cassini mission maintains a pool of trained public speakers who can give presentations about the science and engineering of the mission to school and community groups. Speakers give talks, demonstrate science classroom activities, show videos, and support exhibits, science fairs, career fairs, and an array of other activities. All Cassini speakers are members of the Cassini flight team either at NASA's Jet Propulsion Laboratory (JPL) or at one of the mission's distributed operation sites across the country.

Lead: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shannon.mcconnell@jpl.nasa.gov. Phone: 818-393-5815.

Primary URL: <http://saturn.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	08 Oct 02	Disney Day Care	Burbank, CA	40	0	0
15 Oct 02	15 Oct 02	Clark Atlanta University	Atlanta, GA	22	0	0
16 Oct 02	16 Oct 02	Georgia Institute of Technology	Atlanta, GA	28	0	0
21 Oct 02	21 Oct 02	Challenger Center for Space Science Education	Alexandria, VA	90	0	0
23 Oct 02	23 Oct 02	Challenger Center for Space Science Education	Alexandria, VA	90	0	0
04 Nov 02	04 Nov 02	Pomona After Stroke Club	Pomona, CA	0	48	0
12 Nov 02	12 Nov 02	Glendale Kiwanis Club	Glendale, CA	0	26	0
21 Nov 02	21 Nov 02	Signal Hill Library	Signal Hill, CA	56	0	0
09 Jan 03	09 Jan 03	Fullerton College	Fullerton, CA	105	0	0
21 Jan 03	21 Jan 03	Glendive Boys and Girls Club	Glendive, MT	80	0	0
21 Jan 03	21 Jan 03	Glendive Boys and Girls Club	Glendive, MT	80	0	0
21 Jan 03	21 Jan 03	University of Idaho	Moscow, ID	40	0	0
28 Jan 03	28 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	20	0	0
04 Feb 03	04 Feb 03	Whittier College	Whittier, CA	150	0	0
10 Mar 03	10 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	36	0
15 Mar 03	15 Mar 03	Astronomy Club of Santa Clarita	Newhall, CA	0	20	0
22 Apr 03	22 Apr 03	Communities in Schools of Wichita	Wichita, KS	615	0	0
24 Apr 03	24 Apr 03	Exploration Place	Wichita, KS	0	40	0
30 Apr 03	30 Apr 03	Los Angeles County Office of Education	Downey, CA	10	0	0
02 May 03	02 May 03	Reuben H. Fleet Science Center	San Diego, CA	69	40	0
03 May 03	03 May 03	Courtyard by Marriott	Pasadena, CA	18	0	0
23 Jul 03	23 Jul 03	Kiwanis Club of Eagle Rock	Los Angeles, CA	20	0	0
23 Aug 03	23 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	40	0	0

A345. Chandra X-Ray Center Operation Control Center Tours

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: The Chandra X-Ray Center conducts tours of the Chandra Operations Control Center for education and public groups which include audience or age-appropriate presentations about the Chandra mission and science and a discussion (or actual demonstration) of satellite operations. Tours are frequently carried out in collaboration with the Chandra Project at the Massachusetts Institute of Technology. Tours can be requested by sending an e-mail to the Chandra Public Outreach Group at cxcedu@harvard.edu. In the past year, 16 tours were conducted that reached 274 students (grades 3-13), 84 teachers (grades 3-12) and 58 adults associated with other groups.

Lead: Mr. Bruce Roberts, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: broberts@cfa.harvard.edu. Phone: 617-496-7089.

Scientist(s):	Dr. Roger Brissenden	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Bruce Roberts	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

Partner(s):	Massachusetts Institute of Technology	Cambridge, MA
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	416	0	0

A346. Chandra X-Ray Center: Online Education and Outreach

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: The Chandra X-Ray Center maintains an award-winning Web site providing access to the general public, educators, students, amateur astronomers, and special interest groups. The Web site presents all Chandra images released publicly to date, background and contextual information about cosmic x-ray sources, an updated archive of answers to questions that were submitted through "Ask an Astrophysicist", downloadable classroom-ready materials and resources, a program that provides simplified access and structured guidance for

educator use of Chandra data sets and analysis tools, and special features such as the Chandra Chronicles and the Chandra Digest. Updates are automatically made to the main NASA and Smithsonian Institution portals. The Chandra public Web site was upgraded to full compliance with Federal Section 508 standards for accessibility, and meets 100 percent of the Web Access Initiative Conformance A, Priority 1 guidelines of the World Wide Web Consortium. Rating labels for family-friendly surfing were added. The Web site was chosen for inclusion in PSIGate, the Physical Science Information Gateway, "a free online catalog of high quality Internet resources in the physical sciences." Resources are selected, catalogued, and indexed by researchers and other specialists in their respective fields. Various statistics of Web use are maintained. Unique IP addresses give a severe undercount due to firewalls. The Web site maintained an average of 6.7 million hits per month and visits from 172,000 other Web sites. Dramatic increases (9-10 million hits) were recorded in connection with Space Science Updates.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.

Contact: Ms. Kimberly Kowal, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: kkowal@cfa.harvard.edu. Phone: 617-496-7860.

Primary URL: <http://chandra.harvard.edu>

A347. Chandra X-Ray Center: Public Outreach

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: Members of the Chandra X-Ray Center, staff and scientists, working with Chandra observations, present talks and distribute outreach materials (such as posters, CDs, etc.) to diverse public groups to inform the general public and special interest groups about the status of the Chandra mission and the latest exciting science results. Talks are illustrated with viewgraphs, slides, or multimedia presentations. Outreach materials are provided at no cost and in sufficient quantity to supply audience needs: over 50,000 lithos, posters, and CD-ROMs were distributed this year. All printed and multimedia materials contain addresses and Web sites where the public can obtain further information. In this past year, talks ranged from a presentation at the World Space Congress to a live lecture with a simultaneous Webcast for a non-specialist audience at the University of Lowell. Two programs produced with the Passport to Knowledge program continue to be rebroadcast nationally on NASA-TV and PBS stations. The three Space Science Updates generated significant media interest.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.

Contact: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.

Primary URL: <http://chandra.harvard.edu>

2nd URL: <http://science.nasa.gov>

Scientist(s):	Dr. Roger Blandford	California Institute of Technology	Pasadena, CA
	Dr. Joan Centrella	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. R. Hank Donnelly	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Peter Edmonds	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Paul Hertz	NASA Office of Space Science	Washington, DC
	Ms. April Hobart	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Holly Jessop	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Philip Kaaret	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Margarita Karovska	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Anne Kinney	NASA Office of Space Science	Washington, DC
	Ms. Kimberly Kowal	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Bruce Margon	Space Telescope Science Institute	Baltimore, MD
	Dr. Stephen Murray	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Mr. Jordan Raddick	Johns Hopkins University	Baltimore, MD
	Dr. Stein Sigurdsson	Pennsylvania State University	University Park, PA
	Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Harvey Tananbaum	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Wallace Tucker	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Neil Tyson	American Museum of Natural History	New York, NY
	Ms. Megan Watzke	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

Partner(s): Dr. Kim Weaver NASA Goddard Space Flight Center Greenbelt, MD
 Ms. Melissa Weiss Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Ms. Donna Young Tufts University Medford, MA
 Event(s): NASA Office of Education Washington, DC

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA-TV	Washington, DC	0	1,000,000	0
03 Oct 02	03 Oct 02	NASA-TV	Washington, DC	0	100,000	0
04 Oct 02	04 Oct 02	50 Years of the Macedonian Society of Physicists				
			Skopje, Macedonia	0	100	0
28 Oct 02	28 Oct 02	Guilford Technical Community College	Jamestown, NC	0	250	0
15 Nov 02	15 Nov 02	University of Vermont, Burlington	Burlington, VT	0	250	0
19 Nov 02	19 Nov 02	NASA-TV	Washington, DC	0	5,500,000	0
28 Apr 03	02 May 03	World Space Congress	Cocoa Beach, FL	0	250	0
21 May 03	22 May 03	International Amateur-Professional Photoelectric Photometry (IAPPP)				
		Western Division Convention	Big Bear Lake, CA	0	125	0
23 May 03	24 May 03	Riverside Telescope Maker's Convention				
		Lake Williams	Big Bear City, CA	0	1,600	0
07 Jul 03	07 Jul 03	TERC	Cambridge, MA	30	0	0
09 Jul 03	12 Jul 03	Astronomical League Convention	Nashville, TN	0	200	0
09 Sep 03	09 Sep 03	NASA-TV	Washington, DC	0	5,500,000	0

A348. Childrens Night at the Harvard-Smithsonian Center for Astrophysics

Theme(s): ASO, SEC, SEU, SSE
 Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]
 Description: Always in high demand at the Harvard-Smithsonian Center for Astrophysics, the free Childrens' Night programs provide children ages 8 to 13 with an evening of enjoyable education. Each session features interactive activities designed to stimulate and enlighten, followed by telescope viewing on the observatory roof if weather permits. This fall's program will give kids a chance to "find planets" around other stars using the same methods as professional astronomers. The program has reservation requests at least three times greater than the number of available spaces.

Lead: Mr. David Aguilar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: daguilar@cfa.harvard.edu. Phone: 617-495-7461.

Primary URL: <http://cfa-www.harvard.edu/events.html>

Scientist(s): Ms. Ruth Bazinet Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Dr. Ryan Hickox Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Ms. Christine Lafon Harvard-Smithsonian Center for Astrophysics Cambridge, MA
 Dr. Nathalie Martimbeau Harvard-Smithsonian Center for Astrophysics Cambridge, MA

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
28 Feb 03	28 Feb 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	240	0
09 May 03	09 May 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	160	0

A349. CHIPS: Public Outreach and Informal Education

Theme(s): SEU
 Msn/Prgm: CHIPS[B72]
 Description: The CHIPS staff at the University of California, Berkeley, supports the efforts of science centers, museums, and planetariums by providing them with images, activities, programs, and scientific presentations. CHIPS mission scientists share the science of their mission with the general public and educators by using specific programs that are developed by science centers. The mission also provides images and animations specifically for educators and for the general public to support programs developed by science centers.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Primary URL: http://cse.ssl.berkeley.edu/chips_epo

Scientist(s): Ms. Patricia Dobson University of California, Berkeley
Dr. Bryan Mendez University of California, Berkeley

Berkeley, CA
Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Jan 03	12 Jan 03	Vandenberg Air Force Base				
		Vandenberg Air Force Base, CA	0	30	0	
28 Jun 03	28 Jun 03	Mt. Tamalpais State Park	Mill Valley, CA	0	250	0

A350. CHIPS: Scientist Involvement in E/PO

Theme(s): SEU

Msn/Prgm: CHIPS[B72]

Description: CHIPS scientists are actively involved in Education and Public Outreach efforts for their mission. Most often they spread their enthusiasm and passion for their science through public lectures.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu.
Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu.
Phone: 510-643-2178.

Scientist(s): Dr. Will Marchant University of California, Berkeley

Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Nov 02	07 Nov 02	Civil Air Patrol	Culpeper, VA	19	19	0
14 Nov 02	14 Nov 02	Fauquier Amateur Radio Association	Warrenton, VA	0	12	0

A351. Club Space Place Activities

Theme(s): SEC, SEU, SSE

Msn/Prgm: ST-5[B116]

Description: Club Space Place, part of the Space Place program, partners with community and national organizations to bring the space program to people in personal, experiential ways. We have 233 community partners (museums, libraries, planetariums, zoos, and aquariums) and several partnerships with national organizations, including Boys & Girls Clubs, the Civil Air Patrol, YWCA, and the 4-H Aerospace Education Program. Four times per year, community partners receive mailings of posters, lithographs, stickers, and the like for posting to their Space Place displays. In addition, all the partners receive quarterly guides to NASA-mission-related structured activities for their visitors or members.

Contact: Ms. Liliana Novati, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Liliana.Novati@jpl.nasa.gov.
Phone: 818-354-1486.

Primary URL: <http://spaceplace.jpl.nasa.gov>

2nd URL: <http://spaceplace.nasa.gov>

Scientist(s): Ms. Diane Fisher NASA Jet Propulsion Laboratory

Pasadena, CA

Partner(s): A.C. Gilbert's Discovery Village

Salem, OR

Air Victory Museum

Medford, NJ

Alexandria Zoological Park

Alexandria, LA

American Museum of Natural History

New York, NY

Andrews Air Force Base

Andrews Air Force

Base, MD

Arkansas Air Museum

Fayetteville, AR

Arthur Storer Planetarium

Calvert County Public Schools

Prince Frederick, MD

Arts and Science Center for Southeast Arkansas

Pine Bluff, AR

Audubon Louisiana Nature Center

New Orleans, LA

Aviation Museum of Kentucky

Lexington, KY

Barksdale Air Force Base Youth Center

Bossier, LA

Bassett Planetarium

Amherst, MA

Bays Mountain Planetarium

Kingsport, TN

Benedum Planetarium

Wheeling, WV

Billings Public Library
 Birmingham Zoo
 Bootheel Youth Museum
 Boys and Girls Club of East Valley, Gila River Branch
 Boys and Girls Club of the Eastern Shoshone Tribe
 Boys and Girls Club of Walatowa, Jeme
 Brazos Valley Family Museum
 Brooks Air Force Base Youth Center

Buehler Planetarium and Observatory
 Cable Natural History Museum
 Calusa Nature Center and Planetarium
 Camp Lejeune Marine Corp Base
 Capron Park Zoo
 Carbondale Public Library
 Casper Planetarium
 Cayce-West Columbia Jaycees
 Central Wisconsin's Children's Museum
 Challenger Learning Center University of Tennessee
 Charleston Community Library, Charleston, SC
 Chattanooga Zoo
 Cherokee Youth Center Boys and Girls Club
 Chesapeake Planetarium
 Children's Metamorphosis Museum
 Children's Museum
 Children's Museum at Yunker Farm
 Children's Museum of La Crosse
 Children's Museum of Northern Nevada
 Children's Museum of South Carolina
 Children's Museum of Stockton
 Cincinnati Museum Center
 Clark Planetarium
 Coca-Cola Space Science Center
 Coeur d'Alene Public Library
 Community College of Southern Nevada,
 Community Library of Lower Brule
 Connecticut's Beardsley Zoo
 Crook County Library
 Curious Kids Museum
 Dallas Museum of Natural History
 Daniel Boone Regional Library
 Delta College
 Discovery Center
 Discovery Center of Springfield
 Discovery Museum
 Discovery Science Place
 Dodge City Public Library
 Don Harrington Discovery Center
 Dover Public Library
 East Tennessee Discovery Center
 Eastern Kentucky University
 Elgin Air Force Base
 Ellsworth Air Force Base

Erie Historical Museum and Planetarium
 Erie Zoo
 Estrella Squadron, Warbird Museum

Billings, MT
 Birmingham, AL
 Malden, MO
 Komatke, AZ
 Fort Washakie, WY
 Pueblo, NM
 Bryan, TX
 Brooks Air Force Base,
 TX

Davie, FL
 Cable, WI
 Fort Myers, FL
 Camp Lejeune, NC
 Attleboro, MA
 Carbondale, IL
 Casper, WY
 West Columbia, SC
 Stevens Point, WI
 Chattanooga, TN

Chattanooga, TN
 Cherokee, NC
 Chesapeake, VA
 Londonderry, NH
 Boca Raton, FL
 Fargo, ND
 La Crosse, WI
 Carson City, NV
 Myrtle Beach, SC
 Stockton, CA
 Cincinnati, OH
 Salt Lake City, UT
 Columbus, GA
 Coeur d'Alene, ID
 Las Vegas, NV
 Lower Brule, SD
 Bridgeport, CT
 Sundance, WY
 Saint Joseph, MI
 Dallas, TX
 Columbia, MO
 Bay City, MI
 Rockford, IL
 Springfield, MO
 Sacramento, CA
 Tyler, TX
 Dodge City, KS
 Amarillo, TX
 Dover, DE
 Knoxville, TN
 Richmond, KY
 Elgin Air Force Base, FL
 Ellsworth Air Force
 Base, SD
 Erie, PA
 Erie, PA
 Paso Robles, CA

Ethyl Universe Planetarium
 Eugene Field Accelerated School
 Evansville Museum of Arts, History and Science
 Evergreen Airventure
 Ewa Beach Public Library
 Exploration Station
 Fairchild Air Force Base

Family Museum
 Farmington Public Library
 Fascinate-U Children's Museum
 Fleischmann Planetarium
 Fort Benning Youth Services
 Fort Bliss Youth Center
 Fort Campbell Child and Youth Services
 Fort Drum Youth Services
 Fort Gordon Youth Center
 Fort Hood Army Base
 Fort Jackson Youth Center
 Fort Knox
 Fort Lewis
 Fort Meade
 Fort Polk
 Fort Sill Youth Center
 Fort Smith Public Library
 Gadsden Public Library
 Gene Roddenberry Planetarium
 Gheens Science Center and Rauch Planetarium
 Golden Pond Planetarium
 Great Lakes Aquarium
 Great Lakes Region Civil Air Patrol

Grizzly and Wolf Discovery Center
 Highlands Museum and Discovery Center
 Holloman Air Force Base Youth Center

Hoover Price Planetarium
 Illinois State University
 Imaginarium Science Discovery Center
 Ira G. Ross Niagra Aerospace Museum
 Jersey Shore Children's Museum

John May Museum Center
 Johnson County Library
 Junior Museum of Bay County
 Kansas Aviation Museum
 Kent District Library
 Kirkland Air Force Base

Lafayette Natural History Museum and Planetarium
 Lake Superior Zoological Gardens
 Lakeview Museum
 Laredo Children's Museum
 Las Cruces Museum of Natural History
 Little Rock Zoo
 Living Science Center
 Longway Planetarium

Richmond, VA
 Mexico, MO
 Evansville, IN
 McMinnville, OR
 Ewa Beach, HI
 Bourbonnais, IL
 Fairchild Air Force
 Base, WA
 Bettendorf, IA
 Farmington, NM
 Fayetteville, NC
 Reno, NV
 Fort Benning, GA
 Fort Bliss, TX
 Fort Campbell, KY
 Fort Drum, NY
 Fort Gordon, GA
 Fort Hood, TX
 Fort Jackson, SC
 Fort Knox, KY
 Fort Lewis, WA
 Fort Meade, MD
 Fort Polk, LA
 Fort Sill, OK
 Fort Smith, AR
 Gadsden, AL
 El Paso, TX
 Louisville, KY
 Golden Pond, KY
 Duluth, MN
 Wright-Patterson Air
 Force Base, OH
 West Yellowstone, MT
 Ashland, KY
 Holloman Air Force
 Base, NM
 Canton, OH
 Normal, IL
 Anchorage, AK
 Niagra Falls, NY
 Egg Harbor Township,
 NJ
 Colorado Springs, CO
 Buffalo, WY
 Panama City, FL
 Wichita, KS
 Wyoming, MI
 Kirkland Air Force
 Base, NM
 Lafayette, LA
 Duluth, MN
 Peoria, IL
 Laredo, TX
 Las Cruces, NM
 Little Rock, AR
 Arlington, TX
 Flint, MI

Lower Hudson Valley Challenger Learning Center
 Lutz Children's Museum
 Madison Metropolitan School District Planetarium
 Mallory Kountze Planetarium
 March Field Museum
 Marine Corps Air Station
 Maxwell-Gunter Air Force Base
 McClellan Aviation Museum
 McConnell Air Force Base

McGuire Air Force Base

Memphis Pink Palace Museum
 Meridian Public Library
 Mesa County Public Library
 Mid-America Air Museum
 Morehead Planetarium
 Morgantown Public Library
 Mountain Home Air Force Base Youth Center
 Muncie School District
 Museo del Nino
 Museum of Arts and Sciences
 Museum of Natural History
 Museum of Southwest
 Museum of the Rockies
 National Soaring Museum
 Naval Station Mayport
 New England Air Museum
 Norfolk Public Library
 North Museum of Natural History and Science
 Northern Stars Planetarium
 Northside Branch Library
 Ocean County College
 Old Rhinebeck Aerodrome
 Ouachita Public Library
 Owls Head Transportation Museum
 Pacific Science Center
 Pana'ewa Rainforest Zoo
 Parkersburg Public Library
 Patrick Air Force Base Youth Center
 Paulucci Space Theater
 Pearson Air Museum
 Perkins Observatory
 Peter White Public Library
 Pima Air and Space Museum
 Platte County Public Library
 Portsmouth Museums
 Provo Library
 Pueblo Zoo
 Putnam County Library System
 R.P. Lee Youth Center

Raritan Valley Community College
 Rawlins Municipal Library
 Riverside Public Library
 Roberson Museum and Science Center
 Rock Eagle Natural History Museum

Suffern, NY
 Manchester, CT
 Madison, WI
 Omaha, NE
 Riverside, CA
 San Diego, CA
 Montgomery, AL
 North Highlands, CA
 McConnell Air Force
 Base, KS
 McGuire Air Force
 Base, NJ
 Memphis, TN
 Meridian, MS
 Grand Junction, CO
 Liberal, KS
 Chapel Hill, NC
 Morgantown, WV
 Mountain Home, ID
 Muncie, IN
 San Juan, PR
 Macon, GA
 Providence, RI
 Midland, TX
 Bozeman, MT
 Elmira, NY
 Mayport, FL
 Windsor Locks, CT
 Norfolk, NE
 Lancaster, PA
 Fairfield, ME
 Chillicothe, OH
 Toms River, NJ
 Rhinebeck, NY
 Monroe, LA
 Owls Head, ME
 Seattle, WA
 Keaau, HI
 Parkersburg, WV
 Satellite Beach, FL
 Hibbing, MN
 Vancouver, WA
 Delaware, OH
 Marquette, MI
 Tucson, AZ
 Wheatland, WY
 Portsmouth, VA
 Provo, UT
 Pueblo, CO
 Cookeville, TN
 Peterson Air Force
 Base, CO
 Somerville, NJ
 Pierre, SD
 Riverside, CA
 Binghamton, NY
 Eatonton, GA

Rocky Mount Children's Museum
 Roosevelt Park Zoo
 Russell C. Davis Planetarium
 Sanford Museum and Planetarium
 Santa Maria Museum of Flight
 Schreder Planetarium and Science Learning Center
 Science Central
 Science Station
 Scienceworks Hands-On Museum
 SciTech Hands On Museum
 Scott Air Force Base
 Shaw Youth Center

Shenandoah Valley Discovery Museum
 Sheridan County Fulmar Public Library
 South Florida Museum and Bishop Planetarium
 South Florida Science Museum
 South Shore Natural Science Center
 Southern Forest World
 Southern Nevada Zoological-Botanical Park
 Southworth Planetarium
 Staerkel Planetarium
 Stanback Planetarium
 Subase Youth Center
 Sudekum Planetarium
 Texas Air Museum
 The Albany Heritage Area Visitors Center
 The Science Factory Children's Museum
 Tillamook Air Museum
 Tinker Air Force Base Youth Services

To'Hajiilee Community School Library
 Tulsa Central Public Library
 Turtle Bay Museum
 Tuzzy Consortium Library
 U.S. Army Garrison
 U.S. Naval Observatory
 Universe Theater and Planetarium
 University of Guam
 University of North Texas
 Utica Zoo
 Venango Museum of Art, Science and Industry
 Vernon P. Saxon Aerospace Museum
 Victory Valley College
 Virginia Living Museum
 W. A. Gayle Planetarium
 Wallace Planetarium
 Ward Beecher Planetarium
 Warhawk Air Museum
 Washington County Free Library
 Western Aerospace Museum
 Western Museum of Flight
 Wilmington Public Library
 Wonderscope Children's Museum
 World of Wonder Children's Museum
 Wyoming Science Adventure Center
 Zoo Montana

Rocky Mount, NC
 Minot, ND
 Jackson, MS
 Cherokee, IA
 Santa Maria, CA
 Redding, CA
 Fort Wayne, IN
 Cedar Rapids, IA
 Ashland, OR
 Aurora, IL
 Scott Air Force Base, IL
 Shaw Air Force Base, SC
 Winchester, VA
 Sheridan, WY
 Bradenton, FL
 West Palm Beach, FL
 Norwell, MA
 Waycross, GA
 Las Vegas, NV
 Portland, ME
 Champaign, IL
 Orangeburg, SC
 Groton, CT
 Nashville, TN
 Rio Hondo, TX
 Albany, NY
 Eugene, OR
 Tillamook, OR
 Tinker Air Force Base, OK
 Canonicito, NM
 Tulsa, OK
 Redding, CA
 Barrow, AK
 Selfridge, Sang, MI
 Washington, DC
 Kalamazoo, MI
 Mangilao, GU
 Denton, TX
 Utica, NY
 Oil City, PA
 Boron, CA
 Victorville, CA
 Newport News, VA
 Montgomery, AL
 Fitchburg, MA
 Youngstown, OH
 Nampa, ID
 Hagerstown, MD
 Oakland, CA
 Hawthorne, CA
 Wilmington, DE
 Shawnee Mission, KS
 Louisville, CO
 Casper, WY
 Billings, MT

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Nov 02	28 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	238	0

A352. "Cosmic Questions" Informal Science: "A Comedy about the Universe"

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: "Girl Meets Boy: A Comedy about the Universe" is a 20-minute, two actor play by Melinda Lopez of the Museum of Science Boston about chance, the Big Bang, and the nature of love. In this play, audiences meet Lily and Robert, undergraduate students of astronomy and literature respectively. The story of how they meet and fall in love is the backdrop for their lively disagreements over how to view the Universe and answer the big questions of life. This play ran during the duration of the "Cosmic Questions" museum exhibit with over 10,000 people attending.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Partner(s): Museum of Science

Boston, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	05 Jan 03	Museum of Science	Boston, MA	0	10,500	0

A353. "Cosmic Questions" Informal Science: Midland Michigan

Theme(s): ASO, SEU

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Structure and Evolution of the Universe (SEU) Forum[B13], DePaul B/F[B15], HST[B22], KECK[B28], CXO[B65]

Description: With the assistance of the SEU and Origins Forums and the DePaul B/F, the Midland Center for the Arts set up a series of public programs to accompany its showing of the National Science Foundation/NASA-funded "Cosmic Questions" exhibition. These programs included a space science lecture series for teachers and interested adults; presentation of family science theater programs developed by Boston's Museum of Science in partnership with the Harvard-Smithsonian Center for Astrophysics; and several special community events, including an ongoing program to use the exhibition as an opportunity for local scouts to earn astronomy badges.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Primary URL: <http://www.mcfta.org>

Scientist(s):	Dr. Guy Consolmagno	University of Arizona	Tucson, AZ
	Dr. Gordan Kane	University of Michigan	Ann Arbor, MI
	Dr. Mario Livio	Space Telescope Science Institute	Baltimore, MD

Partner(s): Midland Center for the Arts

Midland, MI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 Feb 03	02 Sep 03	Midland Center for the Arts	Midland, MI	573	0	0
22 Feb 03	22 Feb 03	Midland Center for the Arts	Midland, MI	0	81	0
23 Feb 03	23 Feb 03	Midland Center for the Arts	Midland, MI	0	168	0
20 Mar 03	20 Mar 03	Midland Center for the Arts	Midland, MI	0	151	0
23 Mar 03	23 Mar 03	Midland Center for the Arts	Midland, MI	0	128	0
10 Apr 03	10 Apr 03	Midland Center for the Arts	Midland, MI	0	63	0
23 Aug 03	23 Aug 03	Midland Center for the Arts	Midland, MI	0	231	0

A354. "Cosmic Questions" Informal Science: "The Real Time Machine"

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: "The Real Time Machine" is a large-audience demonstration dealing with the methods and measurements of time, space, and distance. It was presented at both the Museum of Science, Boston, and the Midland Center

for the Arts in Michigan as part of the "Cosmic Questions" traveling museum exhibit developed by the SEU Forum.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Partner(s): Midland Center for the Arts Midland, MI
Museum of Science Boston, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	05 Jan 03	Museum of Science	Boston, MA	0	9600	0
06 Apr 03	06 Apr 03	Midland Center for the Arts	Midland, MI	0	127	0

A355. Debut of Discovery Program Video, "Unlocking the Mysteries"

Theme(s): SSE

Msn/Prgm: DPSO[B49]

Description: "Unlocking the Mysteries," a new video overview of NASA's Discovery Program and its 10 missions, made its debut at the Association of Science technology Centers' Astronomy and Aerospace Showcase.

Lead: Ms. Shari Asplund, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shari.e.asplund@jpl.nasa.gov. Phone: 818-354-7280.

Scientist(s): Ms. Shari Asplund NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Oct 02	15 Oct 02	Association of Science and Technology Centers Conference	Charlotte, NC	80	0	0

A356. Deep Impact Web Site

Theme(s): SSE

Msn/Prgm: Deep Impact[B51]

Description: We continue to post new material to the Web site on a monthly basis, including images of the spacecraft as it is built at Ball Aerospace in Boulder Colorado. We launched our electronic newsletter "Deep News" this year featuring a monthly update by Principal Investigator Mike A'Hearn. The newsletter highlights activities relating to the mission, its E/PO program, and math and science activities. We also launched the "Send Your Name to a Comet" program and have collected over a half million names to date.

Contact: Ms. Maura Rountree-Brown, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Maura.Rountree-Brown@jpl.nasa.gov. Phone: 818-393-4897.

Primary URL: <http://deepimpact.jpl.nasa.gov>

2nd URL: <http://deepimpact.umd.edu>

Scientist(s): Mr. William Bushwell Ball Aerospace Technologies Corporation Boulder, CO

A357. Deep Impact: Amateur Astronomers Partnership

Theme(s): SSE

Msn/Prgm: Deep Impact[B51]

Description: The Amateur Astronomers Partnership is composed of the Small Telescope Science Program (STSP) and the Amateur Observers Program (AOP). The STSP is in its fourth year of working with a network of advanced amateur astronomers from around the world to image the comet Tempel 1 in support of characterizing the mission's target. The comet was not observable this year, therefore the program was in hibernation. The AOP was under development in preparation for observations of the target in the future. The purpose of this program is to encourage amateur observers and the general public to observe the comet Tempel 1 and comets in general.

Contact: Ms. Elizabeth Warner, University of Maryland, College Park, MD 20742. E-mail: warnerem@astro.umd.edu. Phone: 301-405-6555.

Primary URL: <http://deepimpact.umd.edu/stsp>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Mar 03	24 Mar 03	Fairfax County Public Schools	Falls Church, VA	148	0	0

12 Apr 03	12 Apr 03	Smithsonian National Air and Space Museum	Washington, DC	0	150	0
28 Apr 03	28 Apr 03	Oakland Public School	Oakland, NE	365	30,000	0
28 Apr 03	28 Apr 03	Oakland Public School	Oakland, NE	365	20,001	0
28 Apr 03	28 Apr 03	Tekamah Public School	Tekamah, NE	420	5,001	0
18 May 03	18 May 03	Prince William County Central Library	Manassas, VA	0	55	0
31 May 03	31 May 03	Fairfax County Library	Chantilly, VA	0	40	0
13 Jul 03	13 Jul 03	George Mason University	Fairfax, VA	0	74	0
26 Jul 03	26 Jul 03	Smithsonian National Air and Space Museum	Washington, DC	0	90	0

A358. Deep Impact: Public/Informal Events

Theme(s): SSE

Msn/Prgm: Deep Impact[B51]

Description: The Deep Impact mission's science, engineering, and outreach teams continued to speak at public and informal events, including lectures, tours, activity events, media, and astronomy nights. Forty-four project members, an increase of 20 from FY 2003, delivered talks or participated in events. Almost without exception, the records for public outreach are the result of the direct participation of mission team members rather than solely the distribution of materials. Team members have been creative in their approach to sharing the mission, and it is a high priority to share comet science as a basic part of the presentation. Some events are structured to specific audiences while others are focused on general audiences. Some of the activities listed under public outreach have been made to students through Scouts or 4-H, and those events are presented as educational events. In addition there have been Deep Impact outreach activities through radio stations and via articles in general science magazines.

Contact: Ms. Maura Rountree-Brown, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: *Maura.Rountree-Brown@jpl.nasa.gov*. Phone: 818-393-4897.

Scientist(s):	Dr. Michael A'Hearn	University of Maryland	College Park, MD
	Mr. Jim Baer	Ball Aerospace Technologies Corporation	Boulder, CO
	Dr. Steve Brody	NASA Office of Space Science	Washington, DC
	Mr. Timothy Cline	University of Maryland	College Park, MD
	Ms. Denise Cook-Clampert	Ball Aerospace Technologies Corporation	Boulder, CO
	Ms. Dina Demara	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Gary Emerson	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Mike Ensminger	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Tim Flora	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Dominic Florin	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Doug Frazier	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Joseph Girard	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Michael Hale	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Art Hammon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Monte Henderson	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Rick Hess	Ball Aerospace Technologies Corporation	Boulder, CO
	Ms. Lorna Hess-Frey	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Marty Huisjen	Ball Aerospace Technologies Corporation	Boulder, CO
	Mr. Lewis Kendall	Ball Aerospace Technologies Corporation	Boulder, CO
	Dr. Rosemary Killen	Southwest Research Institute, San Antonio, TX	
	Dr. Jochen Kissel	Max-Planck-Institut for Aeronomie, Katlenburg	Lindau Germany
	Mr. Daniel Kubitschek	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Meredith Larson	Ball Aerospace Technologies Corporation	Boulder, CO
	Dr. Carey Lisse	University of Maryland	College Park, MD
	Mr. Dan Malerbo	Carnegie Science Center	Pittsburgh, PA
	Mr. John Marriott	Ball Aerospace Technologies Corporation	Boulder, CO
	Dr. Lucy McFadden	University of Maryland	College Park, MD
	Ms. Stephanie McLaughlin	University of Maryland	College Park, MD
	Dr. Karen Meech	University of Hawaii at Manoa	Honolulu, HI
	Mr. Jim Mowat	Ball Aerospace Technologies Corporation	Boulder, CO
	Ms. Alice Phinney	Ball Aerospace Technologies Corporation	Boulder, CO
	Ms. Donna Pierce	University of Maryland	College Park, MD
	Ms. Maura Rountree-Brown	NASA Jet Propulsion Laboratory	Pasadena, CA

Ms. Calina Seybold	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Brian Smith	Ball Aerospace Technologies Corporation	Boulder, CO
Mr. Ken Starr	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Ben Stone	Ball Aerospace Technologies Corporation	Boulder, CO
Ms. Melanie Tysdal	Ball Aerospace Technologies Corporation	Boulder, CO
Ms. Elizabeth Warner	University of Maryland	College Park, MD
Dr. Dennis Wellnitz	University of Maryland	College Park, MD
Mr. Walter Whitehead	Ball Aerospace Technologies Corporation	Boulder, CO
Mr. Steve Wissler	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Doak Woodruff	Ball Aerospace Technologies Corporation	Boulder, CO
Dr. Donald Yeomans	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
28 Oct 02	28 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	231,000	0
16 Nov 02	16 Nov 02	Camp Mariposa	Altadena, CA	0	18	0
05 Dec 02	05 Dec 02	University of California, Los Angeles	Los Angeles, CA	20	0	0
10 Jan 03	10 Jan 03	Arroy West Elementary School	Moorpark, CA	245	0	0
15 Jan 03	15 Jan 03	Ryan Elementary School	Lafayette, CO	20	0	0
16 Jan 03	16 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	200,005	0
23 Jan 03	23 Jan 03	University of Hawaii at Manoa	Honolulu, HI	40	0	0
24 Jan 03	24 Jan 03	University of Denver	Denver, CO	57	0	0
31 Jan 03	31 Jan 03	Tuckahoe Elementary School	Arlington, VA	68	0	0
05 Feb 03	10 Feb 03	American Astronomical Society Guidance and Control Conference	Breckenridge, CO	150	0	0
07 Feb 03	07 Feb 03	Faith Christian Academy	Arvada, CO	78	0	0
10 Feb 03	10 Feb 03	University of Maryland	College Park, MD	20	0	0
19 Feb 03	19 Feb 03	Fireside Elementary School	Louisville, CO	30	0	0
20 Feb 03	20 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	8	0
20 Feb 03	20 Feb 03	Scott Carpenter Middle School	Denver, CO	93	0	0
24 Feb 03	24 Feb 03	Western Wyoming Community College	Rock Springs, WY	22	4	0
25 Feb 03	25 Feb 03	Southwest Research Institute	Boulder, CO	20	0	0
26 Feb 03	26 Feb 03	National Oceanic and Atmospheric Administration	Boulder, CO	12	0	0
06 Mar 03	06 Mar 03	Cohasset Street Elementary School	Van Nuys, CA	40	0	0
14 Mar 03	14 Mar 03	North Carolina Museum of Natural Sciences	Raleigh, NC	2	48	0
15 Mar 03	15 Mar 03	Private Residence	Damascus, MD	25	0	0
17 Mar 03	17 Mar 03	University of Maryland	College Park, MD	7	0	0
18 Mar 03	18 Mar 03	Roberto Clemente Middle School	Germantown, MD	114	0	0
21 Mar 03	21 Mar 03	Little Thompson Observatory	Berthoud, CO	3	8	0
28 Mar 03	28 Mar 03	East Silver Spring Elementary School	Silver Spring, MD	20	0	0
05 Apr 03	05 Apr 03	NASA Goddard Space Flight Center	Greenbelt, MD	961	0	0
11 Apr 03	11 Apr 03	Redwood Middle School	Saratoga, CA	386	15	0
11 Apr 03	11 Apr 03	WYPR Radio, 88.1 FM/Baltimore	Baltimore, MD	0	5,000	0
12 Apr 03	12 Apr 03	Private Residence	La Cañada, CA	18	0	0
17 Apr 03	17 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	25	0
23 Apr 03	23 Apr 03	Crestview Christian Reformed Church	Boulder, CO	10	50	0
25 Apr 03	25 Apr 03	Ball Aerospace Technologies Corporation	Boulder, CO	78	59	0
25 Apr 03	25 Apr 03	Ball Aerospace Technologies Corporation	Boulder, CO	82	62	0
25 Apr 03	25 Apr 03	Canyon Lands Campground	Moab, UT	0	20	0
26 Apr 03	26 Apr 03	Maryland Day	College Park, MD	1	400	0
26 Apr 03	26 Apr 03	Smithsonian National Air and Space Museum	Washington, DC	0	55	0
28 Apr 03	28 Apr 03	Private Residence	La Cañada, CA	19	0	0
03 May 03	03 May 03	Maryland Science Center	Baltimore, MD	0	200	0
07 May 03	07 May 03	Flatirons Elementary School	Boulder, CO	270	0	0
07 May 03	07 May 03	Rockville Jewish Community Center	Rockville, MD	25	0	0
07 May 03	07 May 03	Waikiki Rotary Club	Honolulu, HI	60	0	0

07 May 03	07 May 03	Wilson Middle School	Pasadena, CA	23	0	0
08 May 03	09 May 03	Concord Academy	Concord, MA	33	0	0
13 May 03	13 May 03	Meritor Academy	Broomfield, CO	50	0	0
14 May 03	14 May 03	Ball Aerospace Technologies Corporation	Boulder, CO	3	0	0
15 May 03	15 May 03	National Center for Atmospheric Research	Boulder, CO	20	6	0
15 May 03	15 May 03	Private Residence	Bethesda, MD	0	225,000	0
16 May 03	16 May 03	Rolling Hills Elementary School	Aurora, CO	52	0	0
17 May 03	17 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	100	0
19 May 03	19 May 03	Bear Creek Elementary School	Boulder, CO	63	0	0
19 May 03	19 May 03	Pittsburgh Post-Gazette	Pittsburgh, PA	0	250,000	0
19 May 03	19 May 03	The Pacific Club	Honolulu, HI	0	70	0
19 May 03	19 May 03	Waikiki Rotary Club	Honolulu, HI	0	60	0
20 May 03	20 May 03	University of Maryland	College Park, MD	60	0	0
27 May 03	27 May 03	Angevine Middle School	Lafayette, CO	84	0	0
29 May 03	29 May 03	Rock Creek Valley Elementary School	Rockville, MD	31	0	0
30 May 03	30 May 03	Eisenhower Elementary School	Boulder, CO	69	0	0
30 May 03	30 May 03	University of Maryland	College Park, MD	208	0	0
04 Jun 03	04 Jun 03	Max-Planck-Institut für Aeronomie	Katlenburg, Lindau Germany	0	20,000	0
06 Jun 03	06 Jun 03	Young Child Science Discovery Center	Lafayette, CO	11	9	0
11 Jun 03	11 Jun 03	Peak to Peak Elementary School	Lafayette, CO	78	0	0
12 Jun 03	12 Jun 03	Anderson Elementary School	Newport Beach, CA	19	0	0
12 Jun 03	12 Jun 03	Hazeltine Elementary School	Van Nuys, CA	30	0	0
12 Jun 03	12 Jun 03	University of Hawaii at Manoa	Honolulu, HI	25	0	0
14 Jun 03	14 Jun 03	Ute Creek Golf Course	Longmont, CO	0	3	0
16 Jun 03	16 Jun 03	Broad Acres Elementary School	Silver Spring, MD	63	0	0
16 Jun 03	16 Jun 03	Tomahawk Ranch	Bailey, CO	16	0	0
20 Jun 03	20 Jun 03	Cherry Creek State Park	Denver, CO	121	0	0
28 Jun 03	28 Jun 03	Wailea Marriott Resort	Wailea, HI	38	8	0
02 Jul 03	02 Jul 03	Indian Peaks Golf Course	Lafayette, CO	0	3	0
04 Jul 03	04 Jul 03	Private Residence	Dallas, GA	0	40	0
10 Jul 03	10 Jul 03	Elks Club	Boulder, CO	110	0	0
12 Jul 03	12 Jul 03	Private Residence	Niwot, CO	0	12	0
13 Jul 03	16 Jul 03	International Astronomical Union General Assembly	Sydney, Australia	100	0	0
14 Jul 03	14 Jul 03	Tomahawk Ranch	Bailey, CO	26	0	0
15 Jul 03	15 Jul 03	University of Maryland	College Park, MD	1	10,000	0
25 Jul 03	25 Jul 03	Medicine Bow National Forest	Dry Park, WY	61	0	0
25 Jul 03	25 Jul 03	Medicine Bow National Forest	Dry Park, WY	61	0	0
28 Jul 03	28 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	27	2	0
28 Jul 03	28 Jul 03	The Village Hotel	Pohnpei, Federated States of Micronesia	27	4	0
29 Jul 03	29 Jul 03	Ojai High School	Ojai, CA	40	0	0
29 Jul 03	29 Jul 03	Peterson Air Force Base	Colorado Springs, CO	40	0	0
04 Aug 03	04 Aug 03	Tomahawk Ranch	Bailey, CO	34	0	0
15 Aug 03	15 Aug 03	Camp Brighton Woods Girl Scouts Camp	Montgomery County, MD	35	0	0
29 Aug 03	29 Aug 03	Rocky Mountain Christian Academy	Niwot, CO	38	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	37	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	37	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	0	0	0
04 Sep 03	04 Sep 03	Rolling Hills Country Club	Golden, CO	38	10	0
05 Sep 03	05 Sep 03	Scout Training Center	Salinas, CA	12	0	0
06 Sep 03	06 Sep 03	Scout Training Center	Salinas, CA	10	24	0

06 Sep 03	06 Sep 03	Scout Training Center	Salinas, CA	34	0	0
23 Sep 03	23 Sep 03	Ball Aerospace Technologies Corporation	Boulder, CO	8	6	0
25 Sep 03	25 Sep 03	Ball Aerospace Technologies Corporation	Boulder, CO	11	5	0
26 Sep 03	26 Sep 03	Popular Science	New York, NY	0	180,000	0

A359. Deep Space Network Public Events

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: The Deep Space Network offers the service of providing spacecraft communication. We often exhibit at conferences aimed at industry and professionals. In addition, opportunities arise for us to give public talks or participate in some way in public events or exhibits.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s):	Mr. Robert Cesarone	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Andrew Downen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Kay Ferrari	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. James Hodder	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Dwight Holmes	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Michael Klein	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Marie Massey	Goldstone Deep Space Communications Complex	Fort Irwin, CA
	Mr. Robert Polansky	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Shirley Wolff	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	0	7,500	0
19 Feb 03	19 Feb 03	Radisson Resort	Cocoa Beach, FL	0	700	0
28 Apr 03	02 May 03	40th Space Congress	Cocoa Beach, FL	0	2,800	0
22 Aug 03	30 Aug 03	Indianapolis Radio League	Indianapolis, IN	0	300	0
04 Sep 03	04 Sep 03	Lions Club	Ames, IA	0	20	0

A360. Electromagnetic Radiation, Infrared Astronomy, and SOFIA

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: This program incorporates a brief description of the SOFIA mission and "Active Astronomy" kit demonstrations for the development of tours, programs, and general outreach programs for students, teachers, and the general public visiting Yerkes Observatory, or onsite in nearby schools. SOFIA and IR handouts and Web site information are provided.

Lead: Ms. Vivian Hoette, Yerkes Observatory, Williams Bay, WI 53191. E-mail: vhoette@yerkes.uchicago.edu. Phone: 262-245-5555.

Primary URL: <http://astro.uchicago.edu/yerkes/outreach>

Scientist(s):	Dr. Doyal Harper	University of Chicago	Chicago, IL
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	NASA Ames Research Center		Moffett Field, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Jun 03	28 Jun 03	Hands-On Universe Teacher Resource Agent Conference	Williams Bay, WI	25	0	0
08 Aug 03	12 Aug 03	Hands-On Universe Workshop	Stephenville, TX	22	0	0

A361. "Explore! Fun with Science"

Theme(s): SSE

Msn/Prgm: LPI B/F[B16], LPI[B61]

Description: "Explore! Fun with Science" brings space science resources and after-school activities to the informal educational setting of the library. Ten topics (e.g., rocketry, space colonies, solar system, etc.) ultimately will be investigated through video presentations, hands-on activities, imagery and supporting resources. Training sessions are designed to acquaint librarians with space science content, activities, and resources to use in leading library-based children and family programs. Approximately 450 public and school librarians have received training.

Contact: Ms. Mary Noel, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: noel@lpi.usra.edu. Phone: 281-486-2198.

Primary URL: <http://www.lpi.usra.edu/education/EPO/explore.html>

Scientist(s): Dr. Cassandra Runyon College of Charleston

Partner(s): Louisiana Library Association

Southeastern Planetarium Association

Texas Library Association

Charleston, SC

Baton Rouge, LA

Kenner, LA

Austin, TX

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Mar 03	08 Mar 03	Homewood Public Library	Homewood, AL	73	0	0
18 Mar 03	20 Mar 03	Louisiana Library Association	Baton Rouge, LA	900	0	0
03 Apr 03	03 Apr 03	Texas Library Association	Austin, TX	200	0	0
17 Jun 03	20 Jun 03	Southeastern Planetarium Association	Kenner, LA	300	0	0
10 Jul 03	10 Jul 03	Plano Public Library	Plano, TX	25	0	0
25 Aug 03	25 Aug 03	Charleston Community Library	Charleston, SC	4	0	0
11 Sep 03	11 Sep 03	Somerset County Regional Library	Bridgewater, NJ	25	0	0

A362. Far Out Friday

Theme(s): SSE

Msn/Prgm: Adler Center for Space Science Education[B5], Galileo[B38]

Description: In February 2003, Galileo scientist Nagin Cox from NASA's Jet Propulsion laboratory presented a lecture about her experiences with the Galileo mission. In September 2003, Bill Hartmann, a Mars Global Surveyor mission scientist, presented a lecture that gave a comprehensive look at Mars and compared geologic processes on the Red Planet with those on Earth.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Feb 03	07 Feb 03	Adler Planetarium and Astronomy Museum	Chicago, IL	40	0	0
05 Sep 03	05 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	280	0	0

A363. "Fun in the Sun" Summer Camp

Theme(s): SEC

Msn/Prgm: Solar-B[B95]

Description: "Fun in the Sun" is a week-long day camp developed for children aged 9-11. The camp is designed to give the campers an entertaining and engaging exposure to the nature of our Sun, our modern understanding and observation of it, and its very central importance in our lives on Earth. The Sun and Sun-Earth Connection themes are explored through a variety of projects that incorporate scientific ideas, art, and crafts to appeal to the campers' age group, provide ample hands-on/minds-on activities, and produce daily take-home materials and products. Campers begin the week with an orientation to our Sun as a star and the scale of the Sun, planets, and Solar System. The Sun in human history is showcased through some cultural solar iconography and mythology from around the world, and the idea of the Sun in art and myth is made personal when the campers are guided to create their own. Technological connections between humans and the Sun are investigated through examination of modern solar images obtained by satellite observatories like SOHO, Yohkoh, TRACE, Solar-B, and other solar missions. To put solar-measuring technology in the hands of the campers, three different sundial activities are run: a small pendant version, a paper-and-string version, and a large-scale analemmatic "human" dial. The Sun-Earth Connection theme is explored as well, the central focus of which is the "SEEC," or "Sun-Earth Energy Connections" hike in which campers seek out and relate objects

and processes in the immediate environment that are connected to each other in chains and webs of solar energy that flow through the Earth system. At the conclusion of the week, campers build miniature "solar pizzas" and cook them in solar ovens, forming a tasty model of the Sun and its different layers and cooking it using energy from the Sun.

Lead: Mr. Benjamin Burress, Chabot Space and Science Center, Oakland, CA 94619. E-mail: bburress@chabot-space.org. Phone: 510-336-7308.

Primary URL: <http://www.chabotspace.org/vsc/exhibits/solarb>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Jun 03	20 Jun 03	Chabot Space and Science Center	Oakland, CA	13	0	0

A364. Genesis: Education Events/Exhibits

Theme(s): SSE

Msn/Prgm: Genesis[B52]

Description: Genesis events and exhibits allow the Mid-Continent Research for Education and Learning E/PO team to reach and engage a large and varied education and public audience by talking with people about the mission, involving them in hands-on science activities, and disseminating a wide variety of educational materials.

Contact: Ms. Jacinta Behne, Mid-Continent Research for Education and Learning, Aurora, CO 80014. E-mail: jbehne@mcrel.org. Phone: 303-632-5605.

Primary URL: <http://genesissmission.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	08 Oct 02	Denver Museum of Nature and Science	Denver, CO	100	0	0
17 Oct 02	17 Oct 02	Colorado Association of Community Educators Fall Conference	Denver, CO	0	50	0
27 Oct 02	30 Oct 02	Geological Society of America Conference	Denver, CO	0	450	0
21 Nov 02	22 Nov 02	Colorado Science Convention	Denver, CO	300	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	500	0
25 Apr 03	27 Apr 03	Kansas Association of Teachers of Science Kamp 2003	Rock Springs, KS	0	550	0
22 Sep 03	22 Sep 03	Denver Museum of Nature and Science	Denver, CO	0	195	0

A365. GLAST: Public Presentations

Theme(s): SEU

Msn/Prgm: GLAST[B68]

Description: This activity consists of public lectures, demonstrations and interactive workshops featuring the science and technology of the GLAST mission. It includes topics ranging from supermassive black holes in the cores of distant galaxies to gamma-ray explosions that produce unimaginable amounts of energy. GLAST materials are often distributed.

Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

Primary URL: <http://glast.sonoma.edu>

2nd URL: <http://glast.sonoma.edu/resources/index.html>

Scientist(s):	Dr. Lynn Cominsky	Sonoma State University	Rohnert Park, CA
	Dr. Neil Gehrels	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Tim Graves	Sonoma State University	Rohnert Park, CA
	Dr. Giseler Lichti	Max-Planck-Institut für Physik	Giessenbachstrae, Germany
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Dr. Gordon Spear	Sonoma State University	Rohnert Park, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Nov 02	21 Nov 02	Holton Lions Club	Holton, KS	16	0	0

05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	1200	0
10 Jan 03	10 Jan 03	Holton Rotary Club	Holton, KS	24	0	0
19 Feb 03	19 Feb 03	Hyatt Orlando Hotel	Kissimmee, FL	0	40	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	120	0
05 Apr 03	08 Apr 03	American Physical Society Annual Meeting	Philadelphia, PA	0	100	0
25 Jul 03	25 Jul 03	Holton Area Chamber of Commerce	Holton, KS	23	0	0
10 Sep 03	10 Sep 03	Gamma Ray Burst Conference	Santa Fe, NM	0	200	0
18 Sep 03	20 Sep 03	Astrofest	Manteno, IL	80	0	0

A366. Goldstone Apple Valley Radio Telescope: Public Outreach Activities

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: During 2003, the Goldstone Apple Valley Radio Telescope (GAVRT) received coverage in two special media reports, both generated by the Lewis Center for Educational Research. "People" magazine with a large nationwide circulation, featured a full-page color article on GAVRT. A photograph of the 34-meter GAVRT antenna at Goldstone was used as the background image for the article. The article described the growth of the GAVRT Project, which now has students in various parts of the United States using the antenna for radio astronomy and reporting their results to scientists at NASA's Jet Propulsion Laboratory. "Science Scope" is the journal of the National Science Teachers Association. The journal is circulated to their large science educator membership. The May 2003 issue featured a two-page story on the GAVRT Project describing the partnership between NASA/JPL and the Lewis Center for Educational Research and the contribution made by students to real scientific research. Additionally, it noted the impact GAVRT has on participating students, such as providing greater confidence in their ability to perform scientific tasks.

Lead: Mr. David McLaren, Lewis Center for Educational Research, Apple Valley, CA 92307. E-mail: dmacclaren@lcer.org 3333. Phone: 760-946-5414.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn/applevalley>

2nd URL: <http://www.lewiscenter.org/global>

Partner(s): Lewis Center for Educational Research

Apple Valley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Nov 02	18 Nov 02	People Magazine	New York, NY	0	3,000,000	0

A367. Goldstone Communications Complex: Public Tours

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: Tours of Goldstone, NASA's Deep Space Network site in California's Mojave Desert, include visits to 3 or 4 of the huge antennas that track spacecraft exploring our Solar System. Visitors also go inside the pedestal of the 70-meter antenna and spend time in the museum where they are shown videos and see models and displays of missions currently being tracked, as well as historic missions that communicated through the DSN. The public is also given an explanation of the desert environment surrounding Goldstone and the local wildlife.

Lead: Ms. Marie Massey, Goldstone Deep Space Communications Complex, Fort Irwin, CA 92310. E-mail: Marie.massey@csconline.com. Phone: 760-255-8687.

Primary URL: <http://gts.gdscc.nasa.gov>

2nd URL: <http://deepspace.jpl.nasa.gov/dsn/educ/index.html>

Scientist(s): Ms. Marie Massey

Goldstone Deep Space Communications Complex

Fort Irwin, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	31 Oct 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	120	0
01 Nov 02	20 Nov 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	88	0
01 Dec 02	31 Dec 02	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	64	0
02 Jan 03	31 Jan 03	Goldstone Deep Space Communications Complex				

01 Feb 03	28 Feb 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	105	0
02 Mar 03	31 Mar 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	35	0
01 Apr 03	30 Apr 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	151	0
01 May 03	31 May 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	178	0
01 Jun 03	30 Jun 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	86	0
01 Jul 03	31 Jul 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	204	0
01 Aug 03	31 Aug 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	152	0
02 Sep 03	30 Sep 03	Goldstone Deep Space Communications Complex	Fort Irwin, CA	0	84	0
			Fort Irwin, CA	0	93	0

A368. Goldstone Deep Space Communications Complex: Public Outreach

Theme(s): SSE

Msn/Prgm: DSMS[B59]

Description: In addition to the tours offered at Goldstone, the outreach team occasionally has the opportunity to speak to local groups about the Deep Space Network and the fact that Goldstone offers tours to see the antennas along with other topics.

Contact: Ms. Marie Massey, Goldstone Deep Space Communications Complex, Fort Irwin, CA 92310. E-mail: Marie.massey@csconline.com. Phone: 760-255-8687.

Primary URL: <http://deepspace.jpl.nasa.gov/dsn>

Scientist(s): Ms. Marie Massey, Goldstone Deep Space Communications Complex, Fort Irwin, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Jan 03	09 Jan 03	Barstow Optimist Club #15030	Barstow, CA	0	22	0
12 Apr 03	12 Apr 03	Barstow Gymnastic Center	Barstow, CA	0	300	0
16 Sep 03	16 Sep 03	Barstow Chamber of Commerce	Barstow, CA	45	0	0

A369. "Goodbye to Galileo" Coverage

Theme(s): SSE

Msn/Prgm: Adler Center for Space Science Education[B5], Galileo[B38]

Description: The Adler Planetarium Education and Astronomy Departments presented activities to coincide with the end of the Galileo mission. Adler visitors participated in a live phone teleconference from NASA's Jet Propulsion Laboratory, listening in to mission scientist conversations and also asking the scientists questions. Adler Astronomer Doug Roberts spoke to visitors about Galileo mission highlights. Educational activities in the museum focused on Jupiter's Galilean moons.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Sep 03	21 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	160	0	0

A370. HST Cycle E/PO Grant: Scientific Living

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: HST[B22]

Description: Scientific Living is an initiative to harness the power of mass media for education and public outreach in local communities with a focus on space science and astronomy. It involves the production of a series of videos about space science and astronomy that will be promoted by KIMT-TV, the CBS affiliate in Mason City, Iowa.

The video and a companion discussion guide will be given to schools in the station's viewing area. Classroom distribution will be provided through the partnership of the Northern Trails Area Education Agency. KIMT-TV will use its own news meteorologist as the host and narrator of the videos, turning the station's meteorologist into an ambassador for space science and astronomy in both the classroom and community. In the classroom, Scientific Living offers an alternative to traditional videos, i.e., length, a local role model as host, its function as a discussion-starter and not a substitute teacher, and its design to be duplicated to such an extent that it becomes the beginning of a bookshelf resource in local classrooms. The Northern Trails Area Education Agency also has plans to digitize the videos for distribution on a broadband network the agency is building to serve its 96 schools.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

Primary URL: <http://www.aea2.k12.ia.us>

2nd URL: <http://www.kimt.com>

Scientist(s):	Dr. Robin Canup	Southwest Research Institute	Boulder, CO
	Dr. Andrew Fruchter	Space Telescope Science Institute	Baltimore, MD
	Dr. Barry Geldzahler	NASA Office of Space Science	Washington, DC
	Dr. Martha Hanner	NASA Jet Propulsion Laboratory	Pasadena, CA
Partner(s):	KIMT-TV, Channel 3		Mason City, IA
	Northern Trails Area Education Agency		Clear Lake, IA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Feb 02	10 Apr 03	KIMT-TV, Channel 3	Mason City, IA	0	0	0

A371. HST: Astronomy Day 2003

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: The amateur astronomy community, through the participation of hundreds of clubs around the country, hosts many types of events that reach out to the general public in their area. Astronomy Day, held in the spring, promotes the hobby of amateur astronomy and educates the public about HST and other NASA space science missions. The clubs invest time and funds to advertise the event, which is held in a public location such as a shopping mall, college or surrounding a local observatory or science center. Solar observation takes place in the daytime. Astronomy Day attendance by the general public is anywhere from 100 to several thousand people per location. For Astronomy Day 2003 held throughout the nation on May 10, 2003, the Space Telescope Science Institute (STScI) designed and provided a "Hubble Kit" to 183 clubs and science centers to be used for the event. A total of 263,400 HST educational items were sent out. Of the 183 participants, 21 clubs and science centers participated in the May 10, 2003 press release of the Helix Nebula (STScI PRC2003-11). On average, about 1,100 people attended at each location, totaling over 200,000. STScI On-Line Outreach developed an astronomy quiz, "Way-Out Astronomy," which engaged the general public with a light-hearted romp through the galaxy. Three levels of questions were designed, beginner to advanced. This quiz made its debut the week before Astronomy Day 2003. Its success determined that it would become a regular feature on "HubbleSite".

Lead: Mr. John Stoke, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: stoke@stsci.edu. Phone: 410-338-4394.

Contact: Ms. Lucy Albert, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: lalbert@stsci.edu. Phone: 410-338-4857.

Primary URL: <http://www.astroleague.org/al/astroday/astroday.html>

2nd URL: <http://hubblesite.org>

A372. HST: Speaker's Bureau

Theme(s): ASO

Msn/Prgm: HST[B22]

Description: Space Telescope Science Institute (STScI) operates a Speaker's Bureau to fulfill requests from our local and regional communities for presentations about HST. Presentations are given by STScI science and technical staff and cover a range of HST topics, including the telescope itself, recent HST discoveries, and careers in science and technology. Speaker requests typically come from a variety of sources, including schools, science centers, amateur astronomy organizations, and senior/retirement centers.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.

Scientist(s):	Dr. Ann Hornschemeir	Johns Hopkins University	Baltimore, MD
	Mr. Mark Kochte	Space Telescope Science Institute	Baltimore, MD
	Dr. Mario Livio	Space Telescope Science Institute	Baltimore, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Oct 02	25 Oct 02	Villa Maria School of Seton Keough	Baltimore, MD	41	0	0
02 Nov 02	02 Nov 02	Union County College	Cranford, NJ	0	75	0
14 Jan 03	14 Jan 03	Maryland Science Center	Baltimore, MD	0	18	0
30 Jan 03	30 Jan 03	Space Telescope Science Institute	Baltimore, MD	0	150	0
22 Feb 03	22 Feb 03	Midland Center for the Arts	Midland, MI	0	175	0
19 May 03	19 May 03	St. Marks School	Catonsville, MD	31	0	0

A373. IMAGE: Amateur Astronomy Clubs

Theme(s): SEC, SEU

Msn/Prgm: IMAGE[B100]

Description: Lectures were presented at the Astronomical League National Convention regarding the transit of Venus and the mystery of space and time.

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.

Scientist(s):	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 May 03	07 May 03	Optical Society of America, National Capitol Section	Alexandria, VA	0	78	0
09 Jul 03	12 Jul 03	Astronomical League Convention	Nashville, TN	0	55	0

A374. IMAGE: Educational Radio Program

Theme(s): SEC

Msn/Prgm: IMAGE[B100]

Description: The "Destination Tomorrow" radio program is developed by NASA's Langley Research Center. The program is carried by over 700 radio stations across the country, and reaches an adult, technology-savvy audience.

Contact: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.

Scientist(s):	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
Partner(s):	NASA Langley Research Center		Hampton, VA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 Oct 02	02 Oct 02	KTKT Radio, 990 AM/Tucson	Tucson, AZ	0	750,000	0
20 Feb 03	20 Feb 03	NASA Langley Research Center	Hampton, VA	0	5,000,000	0

A375. IMAGE: Planetarium and Museum Lectures

Theme(s): SEC

Msn/Prgm: IMAGE[B100]

Description: Dr. Odenwald was the invited speaker for the Distinguished Author Lecture Series. He discussed the deep mystery of space and human understanding of space, darkness and nothingness based on his recent book "Patterns in the Void."

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.

Primary URL: <http://image.gsfc.nasa.gov/poetry>

Scientist(s):	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	Space Telescope Science Institute	Baltimore, MD	0	85	0
20 Mar 03	21 Mar 03	Chabot Space and Science Center	Oakland, CA	0	82	0
13 May 03	13 May 03	Smithsonian Institution	Washington, DC	0	75	0

A376. Interactive Exhibits at Community Events

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SSI B/F[B20]

Description: The Space Science Institute (SSI) has created a mobile space science outreach exhibit (500 square feet), staffed by SSI educators and scientists to provide hands-on, interactive experiences and NASA outreach materials for all ages at a variety of community events. This small road show was creatively assembled from prototype components of SSI's traveling exhibits: "Electric Space" and "MarsQuest." Our interactive exhibits have been very successful, this year providing support for the Mars Day celebration at Fiske Planetarium at the University of Colorado, Boulder. In addition, SSI education staff have developed family astronomy games and a series of family guides for use in these interactive exhibits that are extremely successful in engaging parents with their children.

Lead: Dr. Cherilynn Morrow, Space Science Institute, Boulder, CO 80301. E-mail: camorrow@colorado.edu. Phone: 720-974-5828.

Scientist(s): Dr. Cherilynn Morrow Space Science Institute Boulder, CO

Partner(s): Fiske Planetarium Boulder, CO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Aug 03	30 Aug 03	Fiske Planetarium	Boulder, CO	120	75	0

A377. International Space Station Audio/Video Contact Event

Theme(s): SSE

Msn/Prgm: Adler Center for Space Science Education[B5]

Description: International Space Station astronauts Dr. Ed Lu and Yuri Malenchenko spoke via audio/video link with students at the Adler Planetarium. Among other topics, Dr. Lu answered questions about the Sun and solar science.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
22 May 03	22 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	45	20	7

A378. Internet Initiatives

Theme(s): ASO

Msn/Prgm: Kepler[B24], Navigator[B27], KECK[B28], LBTI[B29], MSC[B30], SIM[B31], TPF[B32]

Description: Navigator's award-winning "PlanetQuest" Web site serves as a virtual portal for Americans to join in the search for new worlds. It offers content of unprecedented richness and depth, and provides opportunities for the public to learn and participate through interactive visuals, animations, and virtual reality simulations. The dynamic, ever-changing content reflects the rapid pace of discovery in the field of extrasolar planet observation. The Web site has had traffic growth averaging 20 percent per month since its launch in January 2002.

Lead: Mr. Randal Jackson, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Randal.K.Jackson@jpl.nasa.gov. Phone: 818-393-5925.

Primary URL: <http://planetquest.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	2,800,000	0

A379. Mars Close-Up Showing

Theme(s): SSE
 Msn/Prgm: ACE[B98]
 Description: Presentation and explanation of planet motion and Mars surface with several telescopes. Conducted with a University of New Hampshire undergraduate student and an amateur astronomer volunteer.
 Lead: Dr. Eberhard Moebius, University of New Hampshire, Durham, NH 03824. E-mail: eberhard.moebius@unh.edu. Phone: 603-862-3097.

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Aug 03	27 Aug 03	University of New Hampshire	Durham, NH	0	1,000	0

A380. Mars Viewing at Howard University Planetarium

Theme(s): SSE
 Msn/Prgm: MARSSB[B17], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], MER[B42], MGS[B43], Mars Pathfinder[B44], MRO[B45], MSL[B46], Mars Express[B63]
 Description: Mars Viewing at Howard University Observatory was a five-evening public outreach series that featured different guest scientists for each session. Dr. George Carruthers served as the host and activity lead for this series. Dr. Carruthers also featured Mars viewing through the Howard University telescope at the close of each evening session. This series is the first of several public outreach mini-courses being offered by Howard University in partnership with the S.M.A.R.T., Inc. organization and the Mid-Atlantic Region Space Science Broker.
 Lead: Dr. George Carruthers, S.M.A.R.T., Inc., Washington, DC 20024-0871. E-mail: george.carruthers@nrl.navy.mil. Phone: 202-767-2764.

Contact: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: sjones@cet.edu. Phone: 202-554-6487.

Primary URL: <http://mars.jpl.nasa.gov/education/outreach.html>

2nd URL: <http://www.nasa.gov>

Scientist(s):	Dr. Beth Brown	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. George Carruthers	Naval Research Laboratory	Washington, DC
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Aug 03	29 Aug 03	S.M.A.R.T., Inc.	Washington, DC	40	120	0

A381. Mars Viewing Event

Theme(s): SSE
 Msn/Prgm: LPI[B61]
 Description: During the August 2003 close approach of Mars, the Lunar and Planetary Institute (LPI) co-hosted a public outreach event with the Mars Society. Approximately 500 children and adults attended two short lectures that explored the geology of Mars and current missions. Activities, resources, and information about Mars were provided to interested participants by the LPI, Mars Society, and NASA's Johnson Space Center (JSC) Astromaterials Research and Exploration Science E/PO program. Attendees viewed Mars through telescopes hosted by the JSC Astronomical Society.

Lead: Dr. Stephanie Shipp, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: shipp@lpi.usra.edu. Phone: 281-486-2109.

Partner(s):	NASA Johnson Space Center	Houston, TX
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A382. Mars: Documentary Interviews

Theme(s): SSE
 Msn/Prgm: Mars E/PO[B40]
 Description: Mars scientists, engineers, and technical staff describe on camera various aspects of Mars, Mars missions, and their jobs. Footage is used for formal education, informal education, and public outreach purposes.
 Contact: Mr. John Beck, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Rino.J.Passaniti@jpl.nasa.gov. Phone: 818-354-2157.

Scientist(s):	Mr. Gene Brower	NASA Jet Propulsion Laboratory	Pasadena, CA
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Ms. Jessica Collisson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Emily Eelkema	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Matthew Golombek	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Amy Hale	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Geoffrey Lake	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Randell Lindemann	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Gaylon McSmith	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jeffrey Plaut	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Thomas Shain	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Squyres	Cornell University	Ithaca, NY
Mr. Pete Theisinger	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Joel Tumbiolo	NASA Kennedy Space Center	Kennedy Space Center FL
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Ms. Tracy Williams	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Peter Xaypraseuth	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	NASA Ames Research Center	Moffett Field, CA	0	0	0
07 Jan 03	09 Jan 03	Embassy Suites	Arcadia, CA	0	0	0
14 Jan 03	14 Jan 03	NASA Ames Research Center	Moffett Field, CA	0	0	0
26 Mar 03	27 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
03 May 03	08 May 03	Idaho Helicopters	Boise, ID	0	0	0
22 May 03	22 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
06 Jun 03	07 Jul 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	0	0
07 Jun 03	07 Jun 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	0	0
07 Aug 03	07 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
11 Aug 03	11 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
26 Aug 03	26 Aug 03	Mount Wilson Institute	Pasadena, CA	0	0	0

A383. Mars: Public Talks

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars scientists and engineers give public talks nationwide.

Contact: Ms. Connie Gennaro, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail:
Consuelo.Gennaro@jpl.nasa.gov. Phone: 818-393-2502.

Scientist(s):	Ms. Lucy Abramyan	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Chuck Acton	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Bryan Allen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Carlton Allen	NASA Johnson Space Center	Houston, TX
	Ms. Jaclyn Allen	Lockheed Martin Corporation	Houston, TX
	Dr. Bob Anderson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. David Atkinson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Paul Backes	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Enrique Baez	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Blaine Baggett	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Erik Bailey	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Darren Baird	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Cheryl Baker	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Bruce Banerdt	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Todd Barber	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Deborah Bass	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Dave Beaty	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Claudette Beggs	NASA Kennedy Space Center	Kennedy Space Center FL

Mr. Boonsieng Benjauthrit	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Bill Bensler	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Ken Berry	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Derek Blackway	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Kobie Boykins	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Enrico Bruno	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Robert Burke	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Christopher Burns	Arizona State University	Tempe, AZ
Mr. James Butts	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jared Call	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Phillip Callahan	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. John Callas	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Cha	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Phil Christensen	Arizona State University	Tempe, AZ
Mr. Steve Collins	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Brian Cooper	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Julie Cooper	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Cozy	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sandra Dawson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Bill Diener	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. James Diener	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Doody	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Doudrick	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Mary Drake	NASA Johnson Space Center	Houston, TX
Mr. Greg Duran	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Don Eagles	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Chad Edwards	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Erickson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Tom Estill	Chabot Space and Science Center	Oakland, CA
Mr. Jeff Favretto	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. John Flores	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Robert Friedberg	Diné College	Tsaile, AZ
Mr. Charles Galindo	NASA Johnson Space Center	Houston, TX
Mr. Ray Garcia	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jim Garvin	NASA Office of Space Science	Washington, DC
Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Roger Gibbs	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Everett Gibson	NASA Johnson Space Center	Houston, TX
Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Trevor Graff	Arizona State University	Tempe, AZ
Mr. Richard Guerrero	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Joseph Guinn	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Patrick Guske	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Albert Haldeman	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Brian Hammer	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Samad Hayati	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Michael Hecht	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Paul Herrera	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Susan Hoban	NASA Goddard Space Flight Center	Greenbelt, MD
Mr. Tom Hoffman	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Shirley Hoiness	The Boeing Company	Everett, WA
Mr. Tibi Iovu	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Theodore Iskenderian	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Anton Ivanov	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Chuck Jennings	NASA Jet Propulsion Laboratory	Pasadena, CA

Ms. Kimberly Johansen	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Andrew Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Christine Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Debbie Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Jackie Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Ken Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Lloyd Keith	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Gerry Kimball	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Mr. Bob Koukol	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Sanford Krasner	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Da Kuang	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Margaret Lam	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Elizabeth Lamassoure	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Robert Landis	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Pete Landry	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Darlene Lee	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Christopher Lewicki	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kim Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Randell Lindemann	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Shu Liu	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Mary Kae Lockwood	NASA Langley Research Center	Hampton, VA
Mr. Mark Maimone	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Terry Martin	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Bob Mase	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Steven Matousek	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. David McKay	NASA Johnson Space Center	Houston, TX
Dr. Gordon McKay	NASA Johnson Space Center	Houston, TX
Ms. Nycole Miller	Arizona State University	Tempe, AZ
Dr. Jeffrey Moersch	University of Tennessee	Knoxville, TN
Mr. Andy Morrison	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jason Muckenthaler	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Firouz Naderi	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Pablo Narvaez	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Tam Nguyen	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Michael Nieto	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Paul Novak	The Boeing Company	Everett, WA
Ms. Dorice Odell	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Yolanda Oliver	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Rino Passaniti	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Lori Paul	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jeffrey Plaut	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Chris Potts	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Tommy Purer	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Megan Quigley	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Carol Raymond	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jim Rice	Arizona State University	Tempe, AZ
Mr. James Rose	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Ruff	Arizona State University	Tempe, AZ
Mr. Ali Safaeinili	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Mike Sander	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Terry Scharton	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Don Schatzel	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Seidel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Colleen Sharkey	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Carl Simon	NASA Jet Propulsion Laboratory	Pasadena, CA

Mr. Tony Solorzano	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Robert Steinke	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Will Stevanov	Arizona State University	Tempe, AZ
Mr. Scott Striepe	NASA Langley Research Center	Hampton, VA
Mr. George Tahu	NASA Office of Space Science	Washington, DC
Mr. Arthur Thompson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kay Tobola	Lockheed Martin Corporation	Houston, TX
Ms. Julie Townsend	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jennifer Trosper	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Eddie Tunstel	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Mark Underwood	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
Dr. Mike Watkins	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Keith Watt	Arizona State University	Tempe, AZ
Mr. Leonard Wayne	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Guy Webster	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Rich Webster	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Stacy Weinstein	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Randii Wessen	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Phil West	NASA Johnson Space Center	Houston, TX
Mr. David Woerner	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Shirley Wolff	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Michael Wyatt	Arizona State University	Tempe, AZ
Mr. Peter Xaypraseuth	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Thomas Yensco	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Oct 02	04 Oct 02	Massachusetts Institute of Technology	Cambridge, MA	0	150	0
06 Oct 02	06 Oct 02	Christopher Newport University	Newport News, VA	0	150	0
06 Oct 02	06 Oct 02	Massachusetts Institute of Technology	Cambridge, MA	0	150	0
12 Oct 02	12 Oct 02	Foothill Middle School	Arcadia, CA	70	0	0
12 Oct 02	12 Oct 02	John Muir High School	Pasadena, CA	41	0	0
15 Oct 02	21 Oct 02	Girl Scouts of the USA Convention	Long Beach, CA	0	13,000	0
16 Oct 02	16 Oct 02	The Language Institute	Pasadena, CA	64	0	0
18 Oct 02	18 Oct 02	Christopher Newport University	Newport News, VA	0	40	0
21 Oct 02	25 Oct 02	East Middle School	Downey, CA	153	0	0
23 Oct 02	23 Oct 02	User Technology Associates	Pasadena, CA	32	0	0
24 Oct 02	24 Oct 02	Arizona State University	Tempe, AZ	45	0	0
25 Oct 02	25 Oct 02	Highland Oaks Elementary School	Arcadia, CA	32	0	0
26 Oct 02	27 Oct 02	4-H National Agent Conference	Norfolk, VA	1,300	0	0
27 Oct 02	27 Oct 02	Edwards Air Force Base	Edwards, CA	17	0	0
29 Oct 02	29 Oct 02	Cortez School	West Covina, CA	22	0	0
29 Oct 02	29 Oct 02	Los Angeles Convention Center	Los Angeles, CA	30	0	0
29 Oct 02	29 Oct 02	Marriott Waterside	Norfolk, VA	700	0	0
30 Oct 02	30 Oct 02	The Gooden School	Sierra Madre, CA	32	0	0
31 Oct 02	31 Oct 02	Deep Space Network	Madrid, Spain	0	250	0
01 Nov 02	01 Nov 02	CUNY City College of New York	New York, NY	10	0	0
02 Nov 02	03 Nov 02	Vandenberg Air Force Base	Vandenberg Air Force Base, CA	0	75,000	0
11 Nov 02	01 Nov 02	Union Hills Country Club	Union Hills, AZ	130	0	0
12 Nov 02	12 Nov 02	R. K. Mellon Elementary School	Ligonier, PA	400	0	0
12 Nov 02	12 Nov 02	University of Michigan	Ann Arbor, MI	40	0	0
15 Nov 02	15 Nov 02	University of Colorado, Boulder	Boulder, CO	110	0	0
16 Nov 02	16 Nov 02	Nogales High School	Nogales, AZ	35	0	0

21 Nov 02	21 Nov 02	University of California, Irvine	Irvine, CA	50	0	0
22 Nov 02	22 Nov 02	Montague Elementary School	Pacoima, CA	53	0	0
23 Nov 02	23 Nov 02	Pasadena City College	Pasadena, CA	248	0	0
07 Dec 02	07 Dec 02	Arclight Hollywood Theater	Hollywood, CA	0	80	0
08 Dec 02	08 Dec 02	Arclight Hollywood Theater	Hollywood, CA	0	900	0
11 Dec 02	11 Dec 02	Cedarwood Elementary School	Bothell, WA	584	0	0
11 Dec 02	11 Dec 02	South Park Elementary School	Los Angeles, CA	33	0	0
12 Dec 02	12 Dec 02	Don Benito Fundamental Elementary School	Pasadena, CA	33	0	0
12 Dec 02	12 Dec 02	Elysian Heights Elementary School	Los Angeles, CA	43	0	0
13 Dec 02	13 Dec 02	Arizona Science Center	Phoenix, AZ	36	0	0
18 Dec 02	18 Dec 02	Montague Charter Academy	Pacoima, CA	157	0	0
07 Jan 03	17 Jan 03	Capitol Building	Tallahassee, FL	0	5,000	0
17 Jan 03	17 Jan 03	Chandler Elementary School	Pasadena, CA	75	0	0
25 Jan 03	25 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	161	0	0
29 Jan 03	29 Jan 03	Second Presbyterian Church	Knoxville, TN	30	0	0
30 Jan 03	30 Jan 03	Martin Marietta Retirees Club of Santa Maria	Solvang, CA	70	0	0
07 Feb 03	07 Feb 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	75	0
08 Feb 03	08 Feb 03	DePaul University, Lincoln Park Campus	Chicago, IL	200	0	0
08 Feb 03	08 Feb 03	Purdue University	West Lafayette, IN	0	50	0
10 Feb 03	10 Feb 03	University of Colorado, Boulder	Boulder, CO	20	0	0
14 Feb 03	14 Feb 03	Longden Elementary School	Temple City, CA	26	0	0
19 Feb 03	19 Feb 03	Radisson Resort	Cocoa Beach, FL	710	0	0
24 Feb 03	24 Feb 03	Rancho Vista Elementary School	Palmdale, CA	42	0	0
28 Feb 03	28 Feb 03	Massachusetts Institute of Technology	Cambridge, MA	40	0	0
01 Mar 03	01 Mar 03	Triton College	River Grove, IL	239	0	0
06 Mar 03	06 Mar 03	Verdugo Woodlands School	Glendale, CA	470	0	0
08 Mar 03	15 Mar 03	University of California, Irvine	Irvine, CA	0	500	0
13 Mar 03	13 Mar 03	Fees Middle School	Tempe, AZ	1,000	0	0
14 Mar 03	14 Mar 03	Williams Elementary School	Glendora, CA	34	0	0
14 Mar 03	15 Mar 03	Sheraton Gateway Hotel	Los Angeles, CA	0	300	0
15 Mar 03	15 Mar 03	Altadena Foothills Conservancy	Altadena, CA	0	33	0
19 Mar 03	19 Mar 03	St. Rita Elementary School	Sierra Madre, CA	38	0	0
19 Mar 03	23 Mar 03	Anaheim Convention Center	Anaheim, CA	0	12,000	0
20 Mar 03	20 Mar 03	Baldwin Stocker Elementary School	Arcadia, CA	130	0	0
20 Mar 03	20 Mar 03	Brownsburg Challenger Learning Center	Brownsburg, IN	15	0	0
20 Mar 03	20 Mar 03	Wittmann Elementary School	Cerritos, CA	310	0	0
24 Mar 03	24 Mar 03	Sun City West Pioneer Lions Club	Sun City West, AZ	75	0	0
28 Mar 03	29 Mar 03	Arizona State University	Tempe, AZ	2203	0	0
22 Apr 03	22 Apr 03	Communities in Schools of Wichita	Wichita, KS	380	0	0
22 Apr 03	22 Apr 03	Exploration Place	Wichita, KS	33	0	0
24 Apr 03	24 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	800	0
28 Apr 03	01 May 03	Radisson Resort	Cocoa Beach, FL	0	2,800	0
01 May 03	05 May 03	National Capitol Mall	Washington, DC	0	20,000	0
02 May 03	02 May 03	Reuben H. Fleet Science Center	San Diego, CA	76	0	0
03 May 03	03 May 03	NASA Kennedy Space Center	Kennedy Space Center, FL	650	0	0
09 May 03	09 May 03	Mesa Union School Library	Somis, CA	640	0	0
09 May 03	10 May 03	Merritt Square Mall	Merritt Island, FL	0	21,000	0
17 May 03	17 May 03	Arizona Science Center	Phoenix, AZ	0	60	0
17 May 03	18 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	25,000	0
18 May 03	18 May 03	Christian Brothers Leaders	Napa, CA	22	0	0
22 May 03	22 May 03	East Heritage Elementary School	Fontana, CA	32	0	0
22 May 03	22 May 03	Wichita Collegiate School	Wichita, KS	64	0	0
23 May 03	23 May 03	University of California, Los Angeles	Los Angeles, CA	211	0	0
23 May 03	23 May 03	Westmont Elementary School	Anaheim, CA	31	0	0
25 May 03	25 May 03	Geological Society of America (GSA)	Boulder, CO	0	150	0
03 Jun 03	03 Jun 03	Lang Ranch Elementary School	Thousand Oaks, CA	32	0	0
05 Jun 03	05 Jun 03	Crestview Preparatory School	Pasadena, CA	46	0	0

05 Jun 03	05 Jun 03	St. Rita Elementary School	Sierra Madre, CA	38	0	0
06 Jun 03	09 Jun 03	Royal Oaks Elementary School	Duarte, CA	32	0	0
09 Jun 03	09 Jun 03	Hollow Hills Elementary School	Simi Valley, CA	26	0	0
09 Jun 03	09 Jun 03	NASA Johnson Space Center	Houston, TX	49	0	0
13 Jun 03	13 Jun 03	La Cañada Elementary School	La Cañada, CA	102	0	0
13 Jun 03	13 Jun 03	Monte Vista Elementary School	La Crescenta, CA	33	0	0
16 Jun 03	16 Jun 03	NASA Johnson Space Center	Houston, TX	49	0	0
16 Jun 03	16 Jun 03	St. Philip the Apostle School	Pasadena, CA	44	0	0
21 Jun 03	21 Jun 03	Hope Christian Academy	Long Beach, CA	16	0	0
23 Jun 03	23 Jun 03	Lakeview Park	Santa Fe Springs, CA	190	0	0
23 Jun 03	23 Jun 03	NASA Johnson Space Center	Houston, TX	49	0	0
26 Jun 03	26 Jun 03	Santa Monica College	Santa Monica, CA	104	50	0
27 Jun 03	27 Jun 03	Santa Monica College	Santa Monica, CA	186	0	0
07 Jul 03	07 Jul 03	NASA Johnson Space Center	Houston, TX	49	0	0
15 Jul 03	15 Jul 03	Sulfer Springs Elementary School	Santa Clarita, CA	31	0	0
18 Jul 03	18 Jul 03	Santa Monica College	Santa Monica, CA	108	0	0
18 Jul 03	18 Jul 03	Smithsonian National Air and Space Museum	Washington, DC	0	632	0
18 Jul 03	19 Jul 03	Exposition Park	Los Angeles, CA	0	45,000	0
19 Jul 03	19 Jul 03	Santa Monica College	Santa Monica, CA	85	0	0
25 Jul 03	25 Jul 03	Santa Monica College	Santa Monica, CA	67	0	0
25 Jul 03	25 Jul 03	Santa Monica College	Santa Monica, CA	54	0	0
29 Jul 03	29 Jul 03	B'Nai Simcah Preschool	Arcadia, CA	34	0	0
04 Aug 03	04 Aug 03	NASA Johnson Space Center	Houston, TX	79	0	0
05 Aug 03	05 Aug 03	San Diego Convention Center	San Diego, CA	0	4,500	0
06 Aug 03	06 Aug 03	Santa Monica College	Santa Monica, CA	170	0	0
08 Aug 03	08 Aug 03	Santa Monica College	Santa Monica, CA	115	0	0
14 Aug 03	16 Aug 03	Rockefeller Center	New York, NY	0	150,000	0
15 Aug 03	15 Aug 03	Moorpark College	Moorpark, CA	297	0	0
15 Aug 03	15 Aug 03	Santa Monica College	Santa Monica, CA	150	0	0
16 Aug 03	16 Aug 03	Santa Monica College	Santa Monica, CA	40	0	0
20 Aug 03	20 Aug 03	Diné College	Tsaile, AZ	250	0	0
22 Aug 03	22 Aug 03	Richland College Planetarium	Dallas, TX	200	0	0
23 Aug 03	24 Aug 03	Los Angeles County Fairgrounds	Pomona, CA	0	100,000	0
26 Aug 03	26 Aug 03	Chabot Space and Science Center	Oakland, CA	0	500	0
26 Aug 03	26 Aug 03	Santa Monica College	Santa Monica, CA	110	0	0
27 Aug 03	27 Aug 03	Arizona State University	Tempe, AZ	0	45	0
29 Aug 03	29 Aug 03	Museum of Science and Industry	Chicago, IL	300	0	0
29 Aug 03	30 Aug 03	Pasadena Public Library	Pasadena, CA	0	1,400	0
01 Sep 03	05 Sep 03	Central Australian Aviation Museum	Alice Springs, Australia	320	0	0
04 Sep 03	04 Sep 03	Mid-Carolina High School	Prosperity, SC	0	315	0
05 Sep 03	05 Sep 03	Bishop Museum	Honolulu, HI	22	0	0
11 Sep 03	11 Sep 03	Maple Grove Middle School	Battle Ground, WA	87	0	0
15 Sep 03	15 Sep 03	Broadus Elementary School	Pacoima, CA	185	0	0
15 Sep 03	15 Sep 03	Long Beach Convention Center	Long Beach, CA	0	2,000	0
22 Sep 03	22 Sep 03	Los Angeles Valley College	Valley Glen, CA	61	0	0
23 Sep 03	23 Sep 03	Casa Grande Middle School	Casa Grande, AZ	0	1,050	0
25 Sep 03	25 Sep 03	Arizona State University	Tempe, AZ	9	0	0
27 Sep 03	27 Sep 03	Arizona State University	Tempe, AZ	0	402	0
27 Sep 03	27 Sep 03	Lunar and Planetary Institute	Houston, TX	0	350	0

A384. Mars: Public Tours

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Tours of Mars-related facilities led by scientists, engineers, and other knowledgeable experts.

Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: mviotti@pop.jpl.nasa.gov.
Phone: 818-354-8774.

Scientist(s): Ms. Cindy Alarcon-Rivera

NASA Jet Propulsion Laboratory

Pasadena, CA

Dr. Bob Anderson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Blaine Baggett	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Todd Barber	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Deborah Bass	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Ken Berry	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Gaj Birur	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Robert Burke	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Phil Christensen	Arizona State University	Tempe, AZ
Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Doudrick	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Peter Falcon	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Terri Formico	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Matt Froment	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Tim Glotch	Arizona State University	Tempe, AZ
Ms. Meg Hufford	Arizona State University	Tempe, AZ
Ms. Mona Jasnow	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Sammy Kayali	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Mr. Alex Kory	Arizona State University	Tempe, AZ
Ms. Laura Mehall	Arizona State University	Tempe, AZ
Ms. Lisa Nguyen	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Quyen Nguyen	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Annie Richardson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Thomas Shain	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Sue Smrekar	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kathleen Spellman	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jennifer Trosper	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Mr. Barnaby Wasson	Arizona State University	Tempe, AZ
Mr. Keith Watt	Arizona State University	Tempe, AZ
Ms. Aimee Whalen	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Tracy Williams	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Woerner	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Michael Wyatt	Arizona State University	Tempe, AZ

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Oct 02	07 Oct 02	Arizona State University	Tempe, AZ	66	0	0
08 Oct 02	08 Oct 02	Arizona State University	Tempe, AZ	6	0	0
09 Oct 02	09 Oct 02	Arizona State University	Tempe, AZ	12	0	0
11 Oct 02	11 Oct 02	Arizona State University	Tempe, AZ	3	0	0
11 Oct 02	11 Oct 02	Arizona State University	Tempe, AZ	22	0	0
11 Oct 02	11 Oct 02	Arizona State University	Tempe, AZ	20	0	0
16 Oct 02	16 Oct 02	Arizona State University	Tempe, AZ	26	0	0
17 Oct 02	17 Oct 02	Arizona State University	Tempe, AZ	41	0	0
17 Oct 02	17 Oct 02	Arizona State University	Tempe, AZ	2	0	0
18 Oct 02	18 Oct 02	Arizona State University	Tempe, AZ	2	0	0
18 Oct 02	18 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	46	0	0
22 Oct 02	22 Oct 02	Arizona State University	Tempe, AZ	18	0	0
23 Oct 02	23 Oct 02	Arizona State University	Tempe, AZ	5	0	0
24 Oct 02	24 Oct 02	Arizona State University	Tempe, AZ	19	0	0
28 Oct 02	28 Oct 02	Arizona State University	Tempe, AZ	18	0	0
28 Oct 02	28 Oct 02	Arizona State University	Tempe, AZ	45	0	0
28 Oct 02	28 Oct 02	Arizona State University	Tempe, AZ	32	0	0
29 Oct 02	29 Oct 02	Arizona State University	Tempe, AZ	41	0	0

29 Oct 02	29 Oct 02	Arizona State University	Tempe, AZ	20	0	0
29 Oct 02	29 Oct 02	Arizona State University	Tempe, AZ	18	0	0
30 Oct 02	30 Oct 02	Arizona State University	Tempe, AZ	25	0	0
01 Nov 02	01 Nov 02	Arizona State University	Tempe, AZ	17	0	0
01 Nov 02	01 Nov 02	Arizona State University	Tempe, AZ	28	0	0
06 Nov 02	06 Nov 02	Arizona State University	Tempe, AZ	32	0	0
06 Nov 02	06 Nov 02	Arizona State University	Tempe, AZ	38	0	0
07 Nov 02	07 Nov 02	Arizona State University	Tempe, AZ	32	0	0
07 Nov 02	07 Nov 02	Arizona State University	Tempe, AZ	37	0	0
08 Nov 02	08 Nov 02	Arizona State University	Tempe, AZ	2	0	0
12 Nov 02	12 Nov 02	Arizona State University	Tempe, AZ	31	0	0
12 Nov 02	12 Nov 02	Arizona State University	Tempe, AZ	27	0	0
13 Nov 02	13 Nov 02	Arizona State University	Tempe, AZ	21	0	0
13 Nov 02	13 Nov 02	Arizona State University	Tempe, AZ	34	0	0
13 Nov 02	13 Nov 02	Arizona State University	Tempe, AZ	31	0	0
14 Nov 02	14 Nov 02	Arizona State University	Tempe, AZ	30	0	0
14 Nov 02	14 Nov 02	Arizona State University	Tempe, AZ	26	0	0
14 Nov 02	14 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	47	0	0
14 Nov 02	14 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	6	0	0
15 Nov 02	15 Nov 02	Arizona State University	Tempe, AZ	48	0	0
15 Nov 02	15 Nov 02	Arizona State University	Tempe, AZ	11	0	0
19 Nov 02	19 Nov 02	Arizona State University	Tempe, AZ	9	0	0
19 Nov 02	19 Nov 02	Arizona State University	Tempe, AZ	12	0	0
20 Nov 02	20 Nov 02	Arizona State University	Tempe, AZ	50	0	0
21 Nov 02	21 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	48	0	0
22 Nov 02	22 Nov 02	Arizona State University	Tempe, AZ	26	0	0
26 Nov 02	26 Nov 02	Arizona State University	Tempe, AZ	30	0	0
26 Nov 02	26 Nov 02	Arizona State University	Tempe, AZ	21	0	0
26 Nov 02	26 Nov 02	Arizona State University	Tempe, AZ	35	0	0
26 Nov 02	26 Nov 02	Arizona State University	Tempe, AZ	25	0	0
29 Nov 02	29 Nov 02	Arizona State University	Tempe, AZ	14	0	0
03 Dec 02	03 Dec 02	NASA Jet Propulsion Laboratory	Pasadena, CA	2	0	0
14 Jan 03	14 Jan 03	Arizona State University	Tempe, AZ	48	0	0
14 Jan 03	14 Jan 03	Arizona State University	Tempe, AZ	47	0	0
14 Jan 03	14 Jan 03	Arizona State University	Tempe, AZ	41	0	0
16 Jan 03	16 Jan 03	Arizona State University	Tempe, AZ	44	0	0
16 Jan 03	16 Jan 03	Arizona State University	Tempe, AZ	42	0	0
16 Jan 03	16 Jan 03	Arizona State University	Tempe, AZ	49	0	0
17 Jan 03	17 Jan 03	Arizona State University	Tempe, AZ	45	0	0
17 Jan 03	17 Jan 03	Arizona State University	Tempe, AZ	51	0	0
17 Jan 03	17 Jan 03	Arizona State University	Tempe, AZ	43	0	0
25 Jan 03	25 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	12	0	0
29 Jan 03	29 Jan 03	Arizona State University	Tempe, AZ	24	0	0
29 Jan 03	29 Jan 03	Arizona State University	Tempe, AZ	12	0	0
03 Feb 03	03 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	72	0	0
03 Feb 03	03 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	3	0	0
10 Feb 03	10 Feb 03	Arizona State University	Tempe, AZ	43	0	0
11 Feb 03	11 Feb 03	Arizona State University	Tempe, AZ	14	0	0
20 Feb 03	20 Feb 03	Arizona State University	Tempe, AZ	43	0	0
20 Feb 03	21 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	31	0	0
21 Feb 03	21 Feb 03	Arizona State University	Tempe, AZ	12	0	0
21 Feb 03	21 Feb 03	Arizona State University	Tempe, AZ	56	0	0
21 Feb 03	21 Feb 03	Arizona State University	Tempe, AZ	50	0	0
21 Feb 03	21 Feb 03	Arizona State University	Tempe, AZ	41	0	0
21 Feb 03	21 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	9	0	0
21 Feb 03	21 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	42	0	0
21 Feb 03	21 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	6	0	0

25 Feb 03	25 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	49	0	0
28 Feb 03	28 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	75	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	43	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	38	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	35	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	43	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	40	0	0
03 Mar 03	03 Mar 03	Arizona State University	Tempe, AZ	37	0	0
04 Mar 03	04 Mar 03	Arizona State University	Tempe, AZ	34	0	0
04 Mar 03	04 Mar 03	Arizona State University	Tempe, AZ	31	0	0
05 Mar 03	05 Mar 03	Arizona State University	Tempe, AZ	30	0	0
05 Mar 03	05 Mar 03	Arizona State University	Tempe, AZ	38	0	0
07 Mar 03	07 Mar 03	Arizona State University	Tempe, AZ	30	0	0
07 Mar 03	07 Mar 03	Arizona State University	Tempe, AZ	25	0	0
10 Mar 03	10 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	86	0	0
11 Mar 03	11 Mar 03	Arizona State University	Tempe, AZ	51	0	0
15 Mar 03	15 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	38	0	0
19 Mar 03	19 Feb 03	Arizona State University	Tempe, AZ	23	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	12	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	46	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	50	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	54	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	38	0	0
25 Mar 03	25 Mar 03	Arizona State University	Tempe, AZ	49	0	0
26 Mar 03	26 Mar 03	Arizona State University	Tempe, AZ	45	0	0
26 Mar 03	26 Mar 03	Arizona State University	Tempe, AZ	43	0	0
26 Mar 03	26 Mar 03	Arizona State University	Tempe, AZ	45	0	0
27 Mar 03	27 Mar 03	Arizona State University	Tempe, AZ	52	0	0
27 Mar 03	27 Mar 03	Arizona State University	Tempe, AZ	49	0	0
04 Apr 03	04 Apr 03	Arizona State University	Tempe, AZ	36	0	0
04 Apr 03	04 Apr 03	Arizona State University	Tempe, AZ	61	0	0
15 Apr 03	15 Apr 03	Arizona State University	Tempe, AZ	27	0	0
15 Apr 03	15 Apr 03	Arizona State University	Tempe, AZ	29	0	0
15 Apr 03	15 Apr 03	Arizona State University	Tempe, AZ	32	0	0
15 Apr 03	15 Apr 03	Arizona State University	Tempe, AZ	30	0	0
21 Apr 03	21 Apr 03	Arizona State University	Tempe, AZ	25	0	0
23 Apr 03	23 Apr 03	Arizona State University	Tempe, AZ	17	0	0
29 Apr 03	29 Apr 03	Arizona State University	Tempe, AZ	49	0	0
29 Apr 03	29 Apr 03	Arizona State University	Tempe, AZ	42	0	0
30 Apr 03	30 Apr 03	Arizona State University	Tempe, AZ	35	0	0
30 Apr 03	30 Apr 03	Arizona State University	Tempe, AZ	34	0	0
30 Apr 03	30 Apr 03	Arizona State University	Tempe, AZ	33	0	0
02 May 03	02 May 03	Arizona State University	Tempe, AZ	24	0	0
02 May 03	02 May 03	Arizona State University	Tempe, AZ	27	0	0
05 May 03	05 May 03	Arizona State University	Tempe, AZ	22	0	0
06 May 03	06 May 03	Arizona State University	Tempe, AZ	39	0	0
06 May 03	06 May 03	Arizona State University	Tempe, AZ	40	0	0
07 May 03	07 May 03	Arizona State University	Tempe, AZ	27	0	0
07 May 03	07 May 03	Arizona State University	Tempe, AZ	27	0	0
12 May 03	12 May 03	Arizona State University	Tempe, AZ	25	0	0
12 May 03	12 May 03	Arizona State University	Tempe, AZ	13	0	0
19 May 03	19 May 03	Arizona State University	Tempe, AZ	27	0	0
20 May 03	20 May 03	Arizona State University	Tempe, AZ	29	0	0
20 May 03	20 May 03	Arizona State University	Tempe, AZ	26	0	0
20 May 03	20 May 03	Arizona State University	Tempe, AZ	28	0	0
21 May 03	21 May 03	Arizona State University	Tempe, AZ	36	0	0
21 May 03	21 May 03	Arizona State University	Tempe, AZ	32	0	0

22 May 03	22 May 03	Arizona State University	Tempe, AZ	25	0	0
23 May 03	23 May 03	Arizona State University	Tempe, AZ	34	0	0
23 May 03	23 May 03	Arizona State University	Tempe, AZ	34	0	0
28 May 03	28 May 03	Arizona State University	Tempe, AZ	27	0	0
28 May 03	28 May 03	Arizona State University	Tempe, AZ	8	0	0
09 Jun 03	07 Jul 03	NASA Johnson Space Center	Houston, TX	190	0	0
11 Jun 03	11 Jun 03	Arizona State University	Tempe, AZ	32	0	0
13 Jun 03	13 Jun 03	Arizona State University	Tempe, AZ	56	0	0
16 Jun 03	13 Jun 03	Arizona State University	Tempe, AZ	11	0	0
20 Jun 03	20 Jun 03	Arizona State University	Tempe, AZ	15	0	0
14 Jul 03	14 Jul 03	Arizona State University	Tempe, AZ	18	0	0
14 Jul 03	14 Jul 03	Arizona State University	Tempe, AZ	14	0	0
14 Jul 03	14 Jul 03	Arizona State University	Tempe, AZ	26	0	0
23 Jul 03	23 Jul 03	Arizona State University	Tempe, AZ	30	0	0
23 Jul 03	23 Jul 03	Arizona State University	Tempe, AZ	32	0	0
23 Jul 03	23 Jul 03	Arizona State University	Tempe, AZ	42	0	0
30 Jul 03	30 Jul 03	Arizona State University	Tempe, AZ	19	0	0
04 Aug 03	04 Aug 03	Arizona State University	Tempe, AZ	35	0	0
06 Aug 03	06 Aug 03	Arizona State University	Tempe, AZ	17	0	0
26 Aug 03	26 Aug 03	Arizona State University	Tempe, AZ	60	0	0
03 Sep 03	03 Sep 03	Arizona State University	Tempe, AZ	36	0	0
11 Sep 03	11 Sep 03	Arizona State University	Tempe, AZ	16	0	0
12 Sep 03	12 Sep 03	Arizona State University	Tempe, AZ	31	0	0
12 Sep 03	12 Sep 03	Arizona State University	Tempe, AZ	33	0	0
18 Sep 03	18 Sep 03	Arizona State University	Tempe, AZ	20	0	0
29 Sep 03	29 Sep 03	Arizona State University	Tempe, AZ	70	0	0
30 Sep 03	30 Sep 03	Arizona State University	Tempe, AZ	34	0	0

A385. Mars: Web Site Science, Engineering, and Educational Content Development

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars scientists, engineers, and other experts contribute to space science Web site development by writing and editing and ensuring the scientific and technical accuracy of web content.

Contact: Mr. Lance Watanabe, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail:

Lance.T.Watanabe@jpl.nasa.gov.

Primary URL: <http://mars.jpl.nasa.gov>

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	Mr. Todd Bayer	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Bob Berry	Lockheed Martin Space Systems	Littleton, CO
	Ms. Laura Berwin	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Derek Blackway	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Cory Borst	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Cassie Bowman	NASA Ames Research Center	Moffett Field, CA
	Dr. Bill Boynton	University of Arizona	Tucson, AZ
	Mr. Stephen Bridges	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. David Cha	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Phil Christensen	Arizona State University	Tempe, AZ
	Ms. Jessica Collisson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Jim Cutts	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Eric De Jong	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Ken Edgett	Malin Space Science Systems	La Jolla, CA
	Ms. Heather Enos	University of Arizona	Tucson, AZ
	Dr. William Feldman	Los Alamos National Laboratory	Los Alamos, NM

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Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Roger Gibbs	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Kirk Goodall	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Graf	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Gregg Hanchett	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Ayanna Howard	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Hulme	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Thomas Jedrey	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Kimberly Johansen	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Christine Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Jackie Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Martin Johnston	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. John Keller	University of Arizona	Tucson, AZ
Mr. Brett Kennedy	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Henry Kline	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Carl Kloss	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Mr. Jeff Lewis	Lockheed Martin Space Systems	Littleton, CO
Ms. Kim Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Robert Lock	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Gaylon McSmith	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Hap McSween	University of Tennessee	Knoxville, TN
Mr. Greg Mehall	Arizona State University	Tempe, AZ
Mr. Neil Nakamoto	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Tom Nolan	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Frank Palluconi	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Greg Parillo	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Rino Passaniti	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jeffrey Plaut	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Erik Pounders	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sherri Rowe-Lopez	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Premkumar Saganti	NASA Johnson Space Center	Houston, TX
Mr. Gary Savona	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Lori Sears	Raytheon STX	Lanham, MD
Mr. Frank Semerano	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Joel Sercel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Colleen Sharkey	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Chris Shinohara	University of Arizona	Tucson, AZ
Ms. Charli Shuler	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Harman Smith	Raytheon STX	Lanham, MD
Dr. Sue Smrekar	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Anita Sohus	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Alejandro Soto	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Squyres	Cornell University	Ithaca, NY
Mr. Ronald Steinkraus	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Stephen Synnott	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Thomas Thompson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Stephen Townes	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Brian Troung	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Joan Underwood	Lockheed Martin Space Systems	Littleton, CO
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Corby Waste	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Lance Watanabe	Raytheon STX	Lanham, MD
Ms. Susan Watanabe	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Charles Whetsel	NASA Jet Propulsion Laboratory	Pasadena, CA

Dr. Cary Zeitlin Lawrence Berkeley National Laboratory Berkeley, CA
 Mr. John Ziats NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Rich Zurek NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	31 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	134381
01 Nov 02	30 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	174849
14 Nov 02	14 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	139	0	1442
01 Dec 02	31 Dec 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	184965
01 Jan 03	31 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	194772
01 Feb 03	28 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	164811
19 Feb 03	19 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	191	0	1305
01 Mar 03	31 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	220547
01 Apr 03	30 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	215372
01 May 03	31 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	147152
01 Jun 03	30 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	468356
01 Jul 03	31 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	111287
01 Aug 03	31 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	551448

A386. Mars: Web Spotlights

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars scientists and engineers participate in creating stories about their missions, research, and roles in Mars exploration.

Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: mviotti@pop.jpl.nasa.gov. Phone: 818-354-8774.Primary URL: <http://mars.jpl.nasa.gov/spotlight>

Scientist(s): Dr. John Callas NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Matthew Golombek NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Paige Valderrama Arizona State University Tempe, AZ
 Mr. Keith Watt Arizona State University Tempe, AZ

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Oct 02	18 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
13 Nov 02	13 Nov 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
14 Jan 03	14 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
28 Jul 03	28 Jul 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0

A387. Mars: Zipcode Mars

Theme(s): SSE

Msn/Prgm: Mars E/PO[B40]

Description: Mars scientists, engineers, and other Mars experts create online features for student role-modeling purposes.

Contact: Ms. Aubrey Watson, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Aubrey.R.Watson@jpl.nasa.gov. Phone: 818-393-7349.

Scientist(s): Mr. Chuck Acton NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Raymond Arvidson Washington University St. Louis, MO
 Mr. Todd Barber NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Dave Beaty NASA Jet Propulsion Laboratory Pasadena, CA
 Mr. Ed Bennett NASA Jet Propulsion Laboratory Pasadena, CA
 Mr. Bruce Bon NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Ratnakumar Bugga NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. Natalie Cabrol SETI Institute Mountain View, CA
 Dr. Wendy Calvin University of Nevada, Reno Reno, NV
 Dr. Scott Carpenter NASA Jet Propulsion Laboratory Pasadena, CA
 Dr. John Chadwick Idaho State University Pocatello, ID

Mr. Andy Collins	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Gerald Condon	NASA Johnson Space Center	Houston, TX
Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Larry Crumpler,	New Mexico Museum of Natural History and Science	Albuquerque, NM
Dr. Louis D'Amario	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Kaichang Di	Ohio State University	Columbus, OH
Ms. Cynthia Dinwiddie	Southwest Research Institute, San Antonio, TX	
Dr. Lyn Doose	University of Arizona	Tucson, AZ
Ms. Emily Eelkema	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Howard Eisen	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. William Farrand	Space Science Institute	Boulder, CO
Dr. Dale Ferguson	NASA Glenn Research Center	Cleveland, OH
Mr. Cliff Findley	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Anthony Ganino	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Barrie Gauthier	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Saina Ghandchi	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Roy Gladden	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. John Grant	Smithsonian National Museum of Natural History	Washington, DC
Dr. Ronald Greeley	Arizona State University	Tempe, AZ
Dr. John Grotzinger	Massachusetts Institute of Technology	Cambridge, MA
Mr. Joseph Guinn	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Gerald Halpert	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Geoffrey Hauser	Lockheed Martin Space Systems	Littleton, CO
Dr. Michael Hecht	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Scott Hughes	Idaho State University	Pocatello, ID
Dr. Peter Ilott	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Andrew Ingersoll	California Institute of Technology	Pasadena, CA
Dr. Steve Jolly	Lockheed Martin Space Systems	Littleton, CO
Mr. Mitchell Kawasaki	Lockheed Martin Space Systems	Littleton, CO
Mr. Bill Kert	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Geoffrey Lake	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Zoe Learner	Cornell University	Ithaca, NY
Dr. Rongxing Li	Ohio State University	Columbus, OH
Dr. Mike Malin	Malin Space Science Systems	La Jolla, CA
Mr. Mike Mangano	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Ken Mankoff	University of Colorado, Boulder	Boulder, CO
Dr. Alfred McEwen	University of Arizona	Tucson, AZ
Dr. Scott McLennan	State University of New York, Stony Brook	Stony Brook, NY
Dr. Hap McSween	University of Tennessee	Knoxville, TN
Dr. Eldar Noe Dorea	Cornell University	Ithaca, NY
Mr. Keith Novak	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Eric Olds	Swales Aerospace,	Beltsville, MD
Ms. Heather Parsons	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jeffrey Plaut	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Peter Poon	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Mark Powell	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Mark Ryne	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. David Senske	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Darin Skelly	NASA Kennedy Space Center	Kennedy Space Center, FL
Mr. Ted Specht	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Squyres	Cornell University	Ithaca, NY
Dr. Robert Steinke	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Stride	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Grace Tan-Wang	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Taylor	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Thomas Thompson	NASA Jet Propulsion Laboratory	Pasadena, CA

Mr. Barry Tossman	Johns Hopkins Applied Physics Laboratory	Laurel, MD
Mr. Peter Waydo	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Catherine Weitz	NASA Office of Space Science	Washington, DC
Mr. Patrick Whelley	Arizona State University	Tempe, AZ
Mr. Charles Whetsel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Betsy Wilson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Tom Wilson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. David Wilt	NASA Glenn Research Center	Cleveland, OH
Mr. Peter Xaypraseuth	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Fengliang Xu	Ohio State University	Columbus, OH
Ms. LuAnn Yeaman	Lockheed Martin Space Systems	Littleton, CO

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0

A388. Maryland Space Day E/PO

Theme(s): SEU

Msn/Prgm: MARSSB[B17], Mars E/PO[B40], MSL[B46]

Description: The Mid-Atlantic Region Space Science Broker/Facilitator (MARSSB) team constructed paper Mars airplane models with 250 students and others for the Space Day activities at the Maryland Science Center as part of their Space Day event activities.

Lead: Mr. Flavio Mendez, Maryland Science Center, Baltimore, MD 21230. E-mail: mendez@mdsci.org. Phone: 410-545-5995.Contact: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: sjones@cet.edu. Phone: 202-554-6487.

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Mar 03	18 Mar 03	Maryland Science Center	Baltimore, MD	250	0	0

A389. MER Launch Coverage

Theme(s): SSE

Msn/Prgm: Adler Center for Space Science Education[B5], MER[B42]

Description: In the Adler's Cyberspace gallery, staff presented live coverage of the launch of MER-A (Spirit).

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Jun 03	10 Jun 03	Adler Planetarium and Astronomy Museum	Chicago, IL	30	0	0

A390. MIT Center for Space Research Public Outreach

Theme(s): SEU

Msn/Prgm: CXO[B65]

Description: Scientists from the MIT Center for Space Research (CSR) contributed to public outreach with talks about the Chandra X-Ray Observatory (CXO) for interested groups at the MIT campus during tours of laboratories, satellite control centers, and other facilities at the CSR. Our initiatives featured science presentations and tours of CSR facilities for families attending the MIT Family Weekend, members of the Museum of Science, Boston, Smithsonian administrative officers, and local college students. CXO materials were abundantly distributed on each of these occasions.

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.Contact: Dr. Irene Porro, Massachusetts Institute of Technology, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.Primary URL: <http://space.mit.edu/CSR/outreach>

Scientist(s):	Dr. Kathryn Flanagan	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Amy Fredericks	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Thomas Pannuti	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Dr. Preethi Pratap	Massachusetts Institute of Technology	Cambridge, MA
	Mr. Bruce Roberts	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Meredith Tanguay	Massachusetts Institute of Technology	Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Oct 02	18 Oct 02	Massachusetts Institute of Technology	Cambridge, MA	0	20	0
08 Nov 02	08 Nov 02	Museum of Science	Boston, MA	18	0	0
07 Feb 03	07 Feb 03	Massachusetts Institute of Technology	Cambridge, MA	0	23	0
16 May 03	16 May 03	Massachusetts Institute of Technology	Cambridge, MA	0	12	0
27 Jun 03	27 Jun 03	Museum of Science	Boston, MA	30	0	0
11 Jul 03	11 Jul 03	Massachusetts Institute of Technology	Cambridge, MA	20	0	0

A391. Monthly Observatory Nights at the Harvard-Smithsonian Center for Astrophysics

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: "Observatory Nights" at the Harvard-Smithsonian Center for Astrophysics are free programs on astronomy for the general public. The programs feature a nontechnical lecture followed by telescopic observing from the roof, weather permitting. Recent speakers have included Owen Gingerich, Charlie Lada, and Alyssa Goodman.

Lead: Mr. David Aguilar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: daguilar@cfa.harvard.edu. Phone: 617-495-7461.

Primary URL: <http://cfa-www.harvard.edu/ep/obsnight.html>

Scientist(s):	Mr. David Aguilar	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Sally Baliunas	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Alyssa Goodman	Yale University	New Haven, CT
	Dr. Roy Gould	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Samuel Kounaves	Tufts University	Medford, MA
	Dr. Michael Lecar	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Jonathan McDowell	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Nov 02	19 Nov 02	Hopkinton State Park	Hopkinton, MA	0	0	0
16 Jan 03	16 Jan 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
20 Feb 03	20 Feb 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
20 Mar 03	20 Mar 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
17 Apr 03	17 Apr 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
15 May 03	15 May 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
24 Aug 03	24 Aug 03	Oak Ridge Observatory	Harvard, MA	0	0	0
26 Aug 03	26 Aug 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
27 Aug 03	27 Aug 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
28 Aug 03	28 Aug 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0
18 Sep 03	18 Sep 03	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA	0	0	0

A392. NASA Ames Astrobiology Institute Lead Team/Yellowstone National Park Partnership

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: This partnership includes the NASA Ames Research Center astrobiology team, the Lockheed-Martin Corporation, and the Yellowstone National Park Division of Interpretation. Through this partnership, a comprehensive program is being developed to use Yellowstone's colorful and charismatic extremophile microorganisms to illustrate important concepts in astrobiology to Yellowstone's 3 million annual visitors. The study of microorganisms is an essential part of understanding the origins of life in the Universe. Specifically,

the program will: (1) develop a new chapter for the Yellowstone Resources and Issues Manual, the primary resource used to train interpretive rangers and park managers, (2) develop new interpretive signs to be strategically placed along boardwalks, and (3) revise trail guides to coordinate with new signs and provide another layer of learning.

Contact: Ms. Catherine Tsairides, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: ctsairides@mail.arc.nasa.gov. Phone: 650-604-0808.

Scientist(s):	Dr. Baruch Blumberg	Fox Chase Cancer Center	Philadelphia, PA
	Ms. Diane Chalfant	Yellowstone National Park	Yellowstone National Park, WY
	Dr. David Des Marais	NASA Ames Research Center	Moffett Field, CA
	Dr. Jack Farmer	Arizona State University	Tempe, AZ
	Dr. Nancy Hinman	University of Montana	Missoula, MT
	Dr. Rocco Mancinelli	SETI Institute	Mountain View, CA
	Ms. Lynn Rothschild	NASA Ames Research Center	Moffett Field, CA
	Dr. David Ward	University of Washington	Seattle, WA
	Ms. Linda Young	Yellowstone National Park	Yellowstone National Park, WY

A393. NASA Astrobiology Institute (NAI)/Ames Research Center: Microbial Mat Laboratory Tours

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The astrobiology team at NASA's Ames Research Center has a unique laboratory tour available to visiting researchers, NASA officials, local education groups, and outside organizations. Dr. Dave Des Marais, Dr. Brad Bebout and Dr. Tori Hoehler are the lead researchers who prepare their presentations based on the type of group that is scheduled to tour the labs. The public is given a unique opportunity to view the samples and hear from the principal investigators on the project. The tours occur on a continuous basis throughout the year upon request from the NAI, the NASA Office of Public Affairs, the NASA Space Science E/PO program, and other NASA centers.

Contact: Ms. Catherine Tsairides, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: ctsairides@mail.arc.nasa.gov. Phone: 650-604-0808.

A394. NASA Astrobiology Institute (NAI): Astrobiology in the Public Eye

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The public arena provides comprehensive opportunities to broadcast scientific information. Astrobiology benefits from public attention to the core questions of "Where did we come from?", and "Are we alone?" The public outreach activities of the NAI E/PO program reflect the diversity of our research teams. In the realm of public talks and lectures, nine separate NAI lead teams reached wide audiences with information on a myriad of topics relevant to astrobiology. Many of these teams have established ongoing public lecture programs featuring the work of their science team members, tours of scientific facilities, newsletters, and special events such as open houses, space day activities, and other opportunities unique to the institutions. Several of the activities have involved partners such as museums, bookstores, or other major venues, indicating a broad interest in astrobiology topics.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
16 Sep 02	16 Sep 02	University of Colorado, Boulder	Boulder, CO	0	400	0
01 Oct 02	30 Sep 03	Carnegie Institution of Washington	Washington, DC	140	2,000	0
01 Oct 02	30 Sep 03	NASA Ames Research Center	Moffett Field, CA	0	3,050	0
01 Oct 02	30 Sep 03	NASA Astrobiology Institute	Moffett Field, CA	0	1,000	0
01 Oct 02	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	1,000	0
01 Oct 02	30 Sep 03	NASA Johnson Space Center	Houston, TX	355	300	0
01 Oct 02	30 Sep 03	Pennsylvania State University	University Park, PA	0	1,000	0
01 Oct 02	30 Sep 03	University of California, Los Angeles	Los Angeles, CA	0	500	0

01 Oct 02	30 Sep 03	University of Washington	Seattle, WA	670	2,600	0
12 Apr 03	12 Apr 03	Pennsylvania State University	University Park, PA	1140	0	0

A395. NASA Astrobiology Institute (NAI)/Carnegie Institution of Washington: Astrobiology Articles in the Spectrum Newsletter

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: A quarterly publication of the Carnegie Institution of Washington for staff and interested members of the general public regularly features articles about astrobiology research. Articles also appear on the Institution's Web site. The most recent issue featured such articles as "Scientists Trap Hydrogen Gas in Ice Cages" and "The CO₂ Puzzle."

Contact: Dr. Julie Edmonds, Carnegie Institution of Washington, Washington, DC 20015. E-mail: Jedmonds@pst.ciw.edu.

A396. NASA Astrobiology Institute (NAI)/University of Washington: Center for Astrobiology and Early Evolution Newsletter

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: The Center for Astrobiology and Early Evolution (CABEE) newsletter, titled "Planets & Life", is published each autumn and spring academic quarter and disseminated to the public via mailing lists, lectures, workshops, and by our astrobiology community on campus. Each issue (five to date) includes astrobiology research news and news about the University of Washington (UW) astrobiology community. Newsletters will soon be available online via our Web site.

Contact: Ms. Linda Khandro, University of Washington, Seattle, WA 98195. E-mail: lindak@astro.washington.edu.

Primary URL: <http://depts.washington.edu/astrobio>

A397. NASA Astrobiology Institute (NAI): Video Collection Project

Theme(s): ASO, SSE

Msn/Prgm: NAI[B34]

Description: Since April 2000, the NAI E/PO team has been traveling to astrobiology-related conferences with a portable video studio and interviewing attendees about their work and current issues in astrobiology. We have been using the footage to develop Web-based video/article products meant to educate the public, showcase NAI-funded research, and generate dialogue within the community.

Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.

Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.

Primary URL: http://nai.arc.nasa.gov/video_archive

A398. NASA Space Science Outreach: International Technology Education Association Annual Conference

Msn/Prgm: OSS/Outreach[B7]

Description: The goal of the NASA Space Science E/PO program is to "enhance the quality of education." To achieve that goal, NASA participates in a number of E/PO activities at both the regional and national levels. NASA supports a number of regional and national education conferences attended by thousands of educators in mathematics, science, and technology, as well as professional conferences attended by thousands of scientists from all fields of space science. Such activities at these conferences usually entail showcasing an exhibit, distributing educational and outreach material (litho sets, posters, educator guides, strategic plans, and more), conducting educational workshops, giving keynote speeches, highlighting numerous space science Web sites, and having NASA employees and scientists answer questions about space science.

Lead: Ms. Ruth Netting NASA Office of Space Science Washington, DC 20546. E-mail: rnetting@hq.nasa.gov. Phone: 202-358-0539.

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
13 Mar 03	15 Mar 03	International Technology Education Association Annual Conference				
			Nashville, TN	11	5,000	0

A399. NASA Space Science Outreach: National Council of Teachers of Mathematics National Conference

Msn/Prgm: Office Of Space Science[B]

Description: The annual National Council of Teachers of Mathematics (NCTM) conference provides the opportunity for thousands of math teachers to come together and learn more about new and various ways to teach math. The NASA Office of Space Science attends the conference to highlight how math is used to conduct space science and to provide education and outreach materials to the teachers.

Lead: Mr. Dan Woods NASA Office of Space Science Washington, DC

20546. E-mail: Dan.Woods@nasa.gov. Phone: 202-358-0850.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Apr 03	12 Apr 03	National Council of Teachers of Mathematics National Conference	San Antonio, TX	18,000	0	0

A400. NASA Space Science Representation at NSACA Annual Conference

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], Structure and Evolution of the Universe (SEU) Forum[B13], Sun-Earth Connection (SEC) Forum[B14]

Description: The NASA Space Science E/PO Support Network Community-Based Organizations Working Group staffed an information table at the annual conference of the National School Age Care Alliance as a mutual-awareness learning opportunity. We initiated a user needs assessment for the after-school community and disseminated information about NASA Space Science products and activities that may be appropriate for after-school venues.

Lead: Ms. Shari Asplund, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: shari.e.asplund@jpl.nasa.gov. Phone: 818-354-7280.

Scientist(s): Ms. Shari Asplund NASA Jet Propulsion Laboratory Pasadena, CA
Ms. Anita Sohus NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Feb 03	01 Mar 03	National School Age Care Alliance Annual Conference	Salt Lake City, UT	275	0	0

A401. NASA/CONNECT

Theme(s): SEC

Msn/Prgm: IMAGE[B100]

Description: The NASA/CONNECT program "Dancing in the Night Sky" discussed the Northern Lights and the role that the IMAGE satellite plays in understanding their genesis. This program was the first to be co-hosted by a scientist: Dr. Sten Odenwald (IMAGE). The program was a collaboration with the SEC forum, Polar and SOHO.

Lead: Dr. Sten Odenwald, Raytheon Company, Greenbelt, MD 20771. E-mail: odenwald@mail630.gsfc.nasa.gov. Phone: 301-286-6953.

Scientist(s): Dr. Nicola Fox NASA Goddard Space Flight Center Greenbelt, MD
Dr. Sten Odenwald NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Apr 03	10 Apr 03	NASA Langley Research Center	Hampton, VA	0	7,750,000	0

A402. National Engineering Week

Theme(s): SSE

Msn/Prgm: MARSSB[B17], Mars E/PO[B40]

Description: This activity was part of NASA's outreach activities to minority youth during National Engineering Week. The event was held at the National Building Museum in Washington, DC. Drs. Nitin Naik and Stanley Jones lead a hands-on activity with over 300 youth who visited their table-top exhibit. Students were introduced to the planet Mars and the various efforts within NASA OSS to understand more about this planet. Highlights of the MER missions were provided to the youth participants. Flyers promoting an upcoming teacher workshop on Mars were also distributed to the adults attending this program. Five teachers that received flyers at this

event, attended the Mars workshop at the Maryland Science Center the following week.

Lead: Ms. Loretta Smith, NASA Office of Education, Washington, DC 20546. Phone: 202-358-1110.

Contact: Dr. Stanley Jones, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: sjones@cet.edu. Phone: 202-554-6487.

Primary URL: <http://www.nasa.gov>

2nd URL: <http://www.jpl.nasa.gov>

Scientist(s):	Dr. Stanley Jones	Wheeling Jesuit University	Wheeling, WV
	Dr. Nitin Naik	Wheeling Jesuit University	Wheeling, WV

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Feb 03	15 Feb 03	Smithsonian National Air and Space Museum	Washington, DC	0	300	0

A403. Navigator Science Events

Theme(s): ASO

Msn/Prgm: Navigator[B27], KECK[B28], LBTI[B29], MSC[B30], SIM[B31], TPF[B32]

Description: Navigator participates in science-related events with exhibits and demonstrations to engage the public in the ongoing research and discoveries related to extra-solar planet searching.

Lead: Ms. Jenny Tieu, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: jenny.t.tieu@jpl.nasa.gov. Phone: 818-393-4765.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	1,961	0
17 May 03	18 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	5,000	0
19 May 03	25 May 03	American Astronomical Society Meeting	Nashville, TN	0	500	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	0	1,000	0

A404. New Horizons Public Outreach

Theme(s): SSE

Msn/Prgm: MRO[B45], New Horizons[B48], MESSENGER[B54], NEAR[B55], STEREO[B96], TIMED[B97]

Description: The New Horizons E/PO office helps scientists, engineers and other team members become involved in the New Horizons E/PO efforts by providing opportunities for general public outreach. The E/PO office supports these events by providing the resources necessary for the team members to talk to the general public, provide demonstrations, and conduct activities related to the New Horizons mission.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Contact: Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.

Primary URL: <http://www.pluto.jhuapl.edu>

Scientist(s):	Dr. Ralph McNutt	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Mr. Ted Nichols II	Johns Hopkins Applied Physics Laboratory	Laurel, MD
	Dr. S. Alan Stern	Southwest Research Institute	Boulder, CO

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Oct 02	06 Oct 02	American Museum of Natural History	New York, NY	0	100	0
06 Oct 02	11 Oct 02	American Astronomical Society, Division of Planetary Science	Birmingham, AL	0	350	0
12 Oct 02	12 Oct 02	Denver Museum of Nature and Science	Denver, CO	0	60	0
23 Apr 03	23 Apr 03	Columbia Hilton	Columbia, MD	0	78	0
01 Aug 03	01 Aug 03	Springfield Telescope Makers, Inc.	Springfield, VT	0	77	0
08 Aug 03	08 Aug 03	Ball Aerospace Technologies Corporation	Boulder, CO	0	45	0

A405. NIGHTGLOW, NASA, and Amateur Radio Talk

Theme(s): SEU
 Msn/Prgm: SRT[B3]
 Description: Discussion of NIGHTGLOW mission, demonstration of Amateur Television (ATV) payload for student flight.
 Lead: Mr. Robert Hull, New Mexico State University, Las Cruces, Las Cruces, NM 88003. E-mail: rhull@nmsu.edu.
 Phone: 505-646-1556.

Primary URL: <http://www.qsl.net/vk8jj>

Scientist(s): Dr. Louis Barbier NASA Goddard Space Flight Center Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Feb 03	03 Feb 03	Central Australian Aviation Museum	Alice Springs, Australia	12	0	0

A406. Observing Events/MER Updates

Theme(s): SSE
 Msn/Prgm: Adler Center for Space Science Education[B5], MER[B42]
 Description: The Adler Planetarium presented seven Mars observing events in August and September 2003. Several telescopes were available for visitors to observe Mars. Additionally, a live planetarium show, "Mars Tonight", was presented several times during each event in the Adler's Sky Theater. The show included images and information about the MER launches and updates about the rover landings in January. Handouts provided to visitors also contained information about the January MER landings.
 Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Aug 03	31 Aug 03	Adler Planetarium and Astronomy Museum	Chicago, IL	1,500	0	0
05 Sep 03	05 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	350	0	0

A407. Open Night at the Space Telescope Science Institute

Theme(s): ASO
 Msn/Prgm: HST[B22]
 Description: Open Night at the Space Telescope Science Institute (STScI) offers opportunities for the public to learn about the latest science results from HST first-hand. Each month, scientists deliver free public lectures on a variety of cosmic topics. Lectures are given at 8 p.m. the first Tuesday of every month at STScI, on the campus of Johns Hopkins University. Members of the audience also receive HST lithographs and posters related to the evening's topic.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.

Primary URL: http://hubblesite.org/about_us/open-night.shtml

Scientist(s):	Dr. William Blair	Johns Hopkins University	Baltimore, MD
	Dr. Louise Hartley	Space Telescope Science Institute	Baltimore, MD
	Dr. Mario Livio	Space Telescope Science Institute	Baltimore, MD
	Dr. Sangeeta Malhotra	Space Telescope Science Institute	Baltimore, MD
	Dr. Margaret Meixner	Space Telescope Science Institute	Baltimore, MD
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Neill Reid	Space Telescope Science Institute	Baltimore, MD
	Dr. Massimo Robberto	Space Telescope Science Institute	Baltimore, MD
	Dr. Rachel Somerville	Space Telescope Science Institute	Baltimore, MD
	Dr. Frank Summers	Space Telescope Science Institute	Baltimore, MD
	Dr. Jeff Valenti	Space Telescope Science Institute	Baltimore, MD
	Dr. Nolan Walborn	Space Telescope Science Institute	Baltimore, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	01 Oct 02	Space Telescope Science Institute	Baltimore, MD	0	55	0
05 Nov 02	05 Nov 02	Space Telescope Science Institute	Baltimore, MD	0	57	0
03 Dec 02	03 Dec 02	Space Telescope Science Institute	Baltimore, MD	0	135	0
07 Jan 03	07 Jan 03	Space Telescope Science Institute	Baltimore, MD	0	60	0
04 Feb 03	04 Feb 03	Space Telescope Science Institute	Baltimore, MD	0	60	0
04 Mar 03	04 Mar 03	Space Telescope Science Institute	Baltimore, MD	0	65	0
01 Apr 03	01 Apr 03	Space Telescope Science Institute	Baltimore, MD	0	60	0
06 May 03	06 May 03	Space Telescope Science Institute	Baltimore, MD	0	75	0
03 Jun 03	03 Jun 03	Space Telescope Science Institute	Baltimore, MD	0	80	0
01 Jul 03	01 Jul 03	Space Telescope Science Institute	Baltimore, MD	0	75	0
05 Aug 03	05 Aug 03	Space Telescope Science Institute	Baltimore, MD	0	70	0
02 Sep 03	02 Sep 03	Space Telescope Science Institute	Baltimore, MD	0	70	0

A408. Origins: Education Forum Workshops/Presentations

Theme(s): ASO

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11]

Description: Origins staff often attend events for professional organizations, community organizations, and schools to give talks and/or make presentations. Using the program's two defining science questions, "Where do we come from?" and "Are we alone?," Origins talks and presentations have enticed and intrigued a wide variety of audiences.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.

Primary URL: <http://origins.stsci.edu>2nd URL: <http://teachspacescience.org>

Scientist(s):	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Ms. Rhonda Jones	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Denise Smith	Space Telescope Science Institute	Baltimore, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
15 Apr 03	16 Apr 03	National Organization of Black Chemists and Chemical Engineers Annual Conference				
			Indianapolis, IN	10	0	0

A409. Professional/Academic Presentations

Theme(s): SSE

Msn/Prgm: Genesis[B52]

Description: These events are short talks given to groups with advanced academic backgrounds. The talks are therefore given for a higher level than the general public. The groups are typically professionals in other science/technical fields (e.g. medical, computer) or science/math/technical students at universities.

Contact: Ms. Jacinta Behne, Mid-Continent Research for Education and Learning, Aurora, CO 80014. E-mail: jbehne@mcrel.org. Phone: 303-632-5605.

Primary URL: <http://genesission.jpl.nasa.gov>**A410. Public Presentations by New England Space Scientists**

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18], KECK[B28], CXO[B65]

Description: New England space scientists, in partnership with NESSIE agents, are appearing on stage, radio, and television to present exciting research stories to the general public. This oral presentation format continues to be a simple and effective means for space scientists to communicate their research findings and personal stories as scientists. Multi-media enhancements to this time-honored activity have enabled scientists to engage the public in new and exciting ways. The events listed herein and elsewhere (CXO, Keck) involved scientists who have received coaching and other support from NESSIE agents. Tania Ruiz of the Current Science & Technology Center at the Boston Museum of Science has been especially active in providing expert coaching of scientists and assistance with the multi-media aspects of the scientist presentations. This past year, topics have ranged

from astrobiology to cosmology.

Lead: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Contact: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/cst>

2nd URL: <http://www.mos.org/nessie>

Scientist(s):	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Dr. Salman Hameed	Smith College	Northampton, MA
	Dr. Philip Kaaret	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Fulvio Melia	University of Arizona	Tucson, AZ
	Dr. William Waller	Tufts University	Medford, MA
Partner(s):	Harvard-Smithsonian Center for Astrophysics		Cambridge, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Apr 03	25 Apr 03	Museum of Science	Boston, MA	0	30	0
09 Jul 03	12 Jul 03	Astronomical League Convention	Nashville, TN	0	100	0
11 Jul 03	11 Jul 03	Museum of Science	Boston, MA	0	30	0
25 Jul 03	25 Jul 03	University of Illinois at Urbana-Champaign	Urbana, IL	0	10,000	5,000
18 Sep 03	18 Sep 03	Needham Public School System	Needham, MA	0	430	0

A411. RHESSI: Public Outreach and Informal Education

Theme(s): SEC, SEU

Msn/Prgm: CHIPS[B72], FAST[B99], RHESSI[B102]

Description: Lectures given to the San Mateo County Astronomical Society about the RHESSI mission findings.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu.
Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu.
Phone: 510-643-2178.

Scientist(s):	Dr. Manfred Bester	University of California, Berkeley	Berkeley, CA
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Aug 03	01 Aug 03	College of San Mateo	San Mateo, CA	0	75	0

A412. Saturn Observing Campaign

Theme(s): SSE

Msn/Prgm: Adler Center for Space Science Education[B5], Cassini/Huygens Probe[B37]

Description: Along with students from the University of Chicago's Ryerson Astronomical Society, Adler staff provided telescope views of Saturn and updates on the Cassini mission.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: paul@adler-net.org. Phone: 312-322-0325.

Primary URL: <http://www.adlerplanetarium.org>

Partner(s): University of Chicago, Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
07 Feb 02	07 Feb 03	Adler Planetarium and Astronomy Museum	Chicago, IL	100	0	0
07 Mar 03	07 Mar 03	Adler Planetarium and Astronomy Museum	Chicago, IL	100	0	0
04 Apr 03	04 Apr 03	Adler Planetarium and Astronomy Museum	Chicago, IL	100	0	0

A413. Sci-Fi Movie Nights at the Harvard-Smithsonian Center for Astrophysics

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13]

Description: This free series at the Harvard-Smithsonian Center for Astrophysics (CfA) explores the idea that "everything we learned about science, we learned at the movies." A brief presentation by a CfA scientist discusses the good science and bad science in a classic 1950s-era science fiction movie. Then, the movie is screened to the audience. This year, approximately 1,500 people attended this event.

Lead: Mr. David Aguilar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: daguilar@cfa.harvard.edu. Phone: 617-495-7461.
 Primary URL: <http://cfa-www.harvard.edu/events.html>

A414. Science Education Gateway/National Virtual Observatory

Theme(s): SEC

Msn/Prgm: SRT[B3]

Description: The Science Education Gateway/National Virtual Observatory (SEGway/NVO) program, funded by OSS, is a national consortium of science museums, research institutions, and educators that are working together to present the latest space science research for students, teachers, and the general public. SEGway has developed E/PO materials for a number of NASA space science missions, including the HESSI, FAST, CHIPS, and STEREO/IMPACT satellite missions. The SEGway partnership model is founded through a community of educators, science museum personnel, scientists, and institutions such as museums and universities. This highly collaborative network allows partners to leverage their unique skills, resulting in high-quality educational resources that benefit teachers, students, the general public, and the science community.

Lead: Dr. Nahide Craig, University of California, Berkeley, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Primary URL: <http://cse.ssl.berkeley.edu/segway/index.html>

Scientist(s):	Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
	Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Feb 03	24 Feb 03	Community Resources for Science	Oakland, CA	54	0	0
08 Mar 03	08 Mar 03	Lawrence Livermore National Laboratory	Livermore, CA	600	0	0
13 Mar 03	13 Mar 03	Hoover Elementary School	Oakland, CA	80	0	0
17 Sep 03	17 Sep 03	Joaquin Miller Elementary School	Oakland, CA	30	0	0

A415. SEC Forum: Informal and Public Outreach

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], CHIPS[B72], STEREO[B96], FAST[B99], RHESSI[B102]

Description: SEC Forum staff members support the efforts of science centers, museums, and planetariums by providing them with images, activities, programs, and scientific presentations. Mission scientists share the science of their mission with the general public and educators with specific programs developed by a science center. The missions also provide images and animations to support programs developed by the science centers, specifically for educators and for the general public.

Lead: Ms. Karen Meyer, University of California, Berkeley, Berkeley, CA 94720. E-mail: karena@ssl.berkeley.edu. Phone: 510-642-4185.

Contact: Mr. Lou Mayo, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: louis.a.mayo.1@gsfc.nasa.gov. Phone: 301-286-0165.

Primary URL: <http://sunearth.gsfc.nasa.gov>

2nd URL: <http://sunearth.ssl.berkeley.edu>

Scientist(s):	Dr. Manfred Bester	University of California, Berkeley	Berkeley, CA
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Karin Hauck	University of California, Berkeley	Berkeley, CA
	Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Carol Lunsford	University of California, Berkeley	Berkeley, CA
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Ms. Karen Meyer	University of California, Berkeley	Berkeley, CA
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
	Ms. Darlene Park	University of California, Berkeley	Berkeley, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA

Mr. Igor Ruderman University of California, Berkeley Berkeley, CA
 Dr. Greg Schultz University of California, Berkeley Berkeley, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
28 Oct 02	30 May 03	NASA Goddard Space Flight Center	Greenbelt, MD	1,175	0	0
28 Jan 03	28 Jan 03	Hoover Elementary School	Oakland, CA	4	260	0
12 Apr 03	12 Apr 03	University of California, Berkeley	Berkeley, CA	0	240	0
03 May 03	03 May 03	Maryland Science Center	Baltimore, MD	0	200	0
10 May 03	10 May 03	Lawrence Hall of Science	Berkeley, CA	0	100	0

A416. SEC Forum: Outreach at Conferences

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: SEC Forum presents education and public outreach workshops and presentations at conferences. The workshops provide an opportunity to learn about the science and the opportunities available within the Forum. The content is presented by SEC scientists.

Lead: Ms. Carolyn Ng, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: cang@pop630.nasa.gsfc.gov. Phone: 301-286-1359.

Primary URL: <http://sunearth.gsfc.nasa.gov>

Scientist(s):	Dr. David Alexander	Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Meredith Ihnat	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Marilyn Lindstrom	NASA Johnson Space Center	Houston, TX
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
	Ms. Gail Rohrbach	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
	Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
06 Oct 02	11 Oct 02	American Astronomical Society, Division of Planetary Science	Birmingham, AL	50	0	0
24 Oct 02	26 Oct 02	California Science Teachers Association Conference	San Francisco, CA	1	40	0
03 Nov 02	05 Nov 02	Science Teachers Association of New York	Ellenville, NY	0	1800	0
06 Dec 02	10 Dec 02	American Geophysical Union Fall Meeting	San Francisco, CA	0	50	0
24 Jan 03	27 Jan 03	University of Colorado, Boulder	Boulder, CO	3	22	0
08 May 03	10 May 03	Middle Atlantic Planetarium Society Conference	Lanham, MD	90	0	0
16 Jun 03	19 Jun 03	American Association for the Advancement of Science	San Francisco, CA	5	25	0
16 Jun 03	20 Jun 03	American Astronomical Society Solar Physics Division	Laurel, MD	280	0	0
09 Jul 03	12 Jul 03	Astronomical League Convention	Nashville, TN	200	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	50	0	0

A417. SEU Forum: Mission Support

Theme(s): SEU

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], CXO[B65], GLAST[B68], GP-B[B69], LISA[B70], CHIPS[B72], SPIDR[B76], Swift Gamma Ray Burst Mission[B78], WMAP[B79], HEASARC[B81], HETE-2[B83], XMM-Newton[B86]

Description: The SEU Forum supports the SEU mission E/PO programs in a variety of ways, including professional development workshops, support meetings, teleconferences, and development of cross-forum activities to relay themes in a coherent way to the public and to science educators.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Scientist(s):	Ms. Lindsay Bartolone	Adler Planetarium and Astronomy Museum	Chicago, IL
	Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
	Ms. Sandra Daly	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Mary Dussault	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Roy Gould	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. James Lochner	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Dr. Irene Porro	Massachusetts Institute of Technology	Cambridge, MA
	Ms. Shannon Range	Stanford University	Stanford, CA
	Ms. Erika Reinfeld	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	20	0	0
29 Apr 03	03 May 03	Museum of Science	Boston, MA	81	0	0

A418. SEU Forum: Support for Informal Science Education

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Structure and Evolution of the Universe (SEU) Forum[B13], NESSIE B/F[B18], SSI B/F[B20]

Description: The SEU Forum coordinates, contributes to, and facilitates educational programs for broad public audiences in informal education settings such as museums, planetariums, and visitor centers. This support includes providing professional development for informal science educators in areas of space science research and education, as well as providing direct support and materials to space science-related events and programs for the public. All the Forum's efforts in informal science education are aimed at making the excitement of space science discovery accessible and relevant to a broad diversity of audiences.

Lead: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: mdus-sault@cfa.harvard.edu. Phone: 617-496-7962.

Scientist(s):	Ms. Mary Dussault	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. John Huchra	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA

Partner(s):	Bishop Museum	Honolulu, HI
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Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Oct 02	15 Oct 02	Association of Science and Technology Centers Conference	Charlotte, NC	195	0	0

A419. SOFIA and HAWC: Yerkes Observatory Tour

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: SOFIA and its HAWC instrument (High-Resolution Airborne Wideband Camera) being built by University of Chicago Principal Investigator Al Harper is an important focus of public tours of the University of Chicago's Yerkes Observatory in Williams Bay, Wisconsin.

Lead: Ms. Vivian Hoette, Yerkes Observatory, Williams Bay, WI 53191. E-mail: vhoette@yerkes.uchicago.edu. Phone: 262-245-5555.

Primary URL: <http://astro.uchicago.edu/yerkes/outreach>

2nd URL: <http://astro.uchicago.edu/hawc/hawc.htm>

Scientist(s):	Mr. Richard Dreiser	Yerkes Observatory	Williams Bay, WI
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Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Sep 02	30 Sep 03	Yerkes Observatory	Williams Bay, WI	0	10,000	0

A420. SOHO: Support for Educational Outreach

Theme(s): SEC

Msn/Prgm: SOHO[B112]

Description: Sun-Earth Connection scientists work together to support educational outreach. Images and materials created by the SOHO team are used to enhance presentations; classroom visits; and museum, planetarium, and science center events that support the Sun-Earth Connection.

Lead: Dr. Steele Hill, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: steele.hill@gsfc.nasa.gov. Phone: 301-286-6452.

Contact: Dr. Nicola Fox, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: foxnj1@jhuapl.edu.

Primary URL: <http://sohowww.nascom.nasa.gov>

2nd URL: <http://www-istp.gsfc.nasa.gov/istp/wind>

Scientist(s):	Dr. John Beck	Stanford University	Stanford, CA
	Dr. Pal Brekke	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Alexander Kosovichev	Stanford University	Stanford, CA
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Paul Mortfield	Stanford University	Stanford, CA
	Ms. Deborah Scherrer	Stanford University	Stanford, CA
	Dr. Philip Scherrer	Stanford University	Stanford, CA
	Mr. Hao Thai	Stanford University	Stanford, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
09 Nov 02	09 Nov 02	California Academy of Sciences	San Francisco, CA	0	300	0
21 Dec 02	21 Dec 02	4-H Palomares	Castro Valley, CA	24	0	0
18 Feb 03	18 Feb 03	Castro Valley Unified School District	Castro Valley, CA	0	65	0
07 Mar 03	07 Mar 03	San Mateo Astronomical Society	San Mateo, CA	0	50	0
18 Mar 03	18 Mar 03	Maryland Science Center	Baltimore, MD	39	330	0
10 Apr 03	10 Apr 03	4-H Palomares	Castro Valley, CA	13	200	0
10 Apr 03	10 Apr 03	California Academy of Sciences	San Francisco, CA	0	5,000	0
10 Apr 03	10 Apr 03	Tech Museum of Innovation	San Jose, CA	0	1,000	0
13 May 03	13 May 03	4-H Palomares	Castro Valley, CA	60	0	0
18 May 03	18 May 03	Castro Valley Unified School District	Castro Valley, CA	8	0	0
18 May 03	18 May 03	Stanford University	Stanford, CA	13	0	0
20 May 03	20 May 03	Ralston Middle School	Belmont, CA	145	0	0
06 Jun 03	14 Sep 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	10,000	0
09 Aug 03	09 Aug 03	Tech Museum of Innovation	San Jose, CA	0	200	0
16 Aug 03	16 Aug 03	Astronomical Society of the Pacific	San Francisco, CA	100	0	0
26 Aug 03	27 Aug 03	4-H Palomares	Castro Valley, CA	15	0	0
03 Sep 03	03 Sep 03	Castro Valley Forum	Castro Valley, CA	0	50,000	0
13 Sep 03	14 Sep 03	WRC-TV, Channel 4/Washington	Washington, DC	0	3,500	0
19 Sep 03	21 Sep 03	4-H Palomares	Castro Valley, CA	13	0	0

A421. Solar System Ambassadors Program

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: OSS/Outreach[B7]

Description: The Solar System Ambassadors Program is a public outreach program designed to work with motivated volunteers across the nation. These volunteers communicate the excitement of NASA's space exploration missions and share information about recent discoveries to people in their local communities.

Lead: Ms. Kay Ferrari, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Kay.A.Ferrari@jpl.nasa.gov. Phone: 818-354-7581.

Primary URL: <http://www.jpl.nasa.gov/ambassador/front.html>

Scientist(s):	Ms. Andrea Angrum	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Shari Asplund	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Blaine Baggett	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Derek Blackway	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Susan Braunheim-Kalogerakos	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Ann Bussone	California Institute of Technology	Pasadena, CA
	Dr. Larry Cooper	NASA Office of Space Science	Washington, DC
	Ms. Kay Ferrari	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Connie Gennaro	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Eddie Gonzales	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. W. Michael Greene	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Samantha Harvey	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Andy Hernandez	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Mona Jasnow	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Kimberly Johansen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Christine Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Rhonda Jones	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Corinne Karpinski	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Parvin Kassaie	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Steve Kulczycki	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Nancy Leon	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Leslie Lowes	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Shannon McConnell	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Lucy McFadden	University of Maryland	College Park, MD
	Dr. Ellis Miner	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Sharon Okonek	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Patti Rhee	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Annie Richardson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Jeffrey Rosendhal	NASA Office of Space Science	Washington, DC
	Ms. Maura Rountree-Brown	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Phil Sakimoto	NASA Office of Space Science	Washington, DC
	Mr. Daniel Sedlacko	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. David Seidel	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Henry Sheen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Margaret Sipple-Srinivasan	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Anita Sohus	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Stephanie Stockman	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA
	Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Jenny Tieu	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Guy Webster	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Alice Wessen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Thomas West	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Aimee Whalen	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Shirley Wolff	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Karen Yuen	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jan 00	01 Jan 00	Boonshoft Museum of Discovery	Dayton, OH	0	0	0
01 Jan 00	01 Jan 00	North Hills High School	Pittsburgh, PA	0	0	0
01 Oct 02	01 May 03	Palisade High School	Palisade, CO	0	450	0
01 Oct 02	30 May 03	Drake Planetarium	Cincinnati, OH	0	20,000	0

01 Oct 02	30 May 03	Drake Planetarium	Cincinnati, OH	0	3,000	0
01 Oct 02	23 Sep 03	Rocky Mountain Radio League	Denver, CO	0	316	0
02 Oct 02	02 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	14	0
03 Oct 02	03 Oct 02	Brownsville Public Library	Brownsville, TX	0	50	0
04 Oct 02	04 Oct 02	Floyd Central High School	Floyds Knobs, IN	0	61	0
04 Oct 02	04 Oct 02	Mt. Tabor Middle School	Portland, OR	0	130	0
04 Oct 02	04 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	35	0
04 Oct 02	04 Oct 02	St. Augustine High School	St. Augustine, FL	0	35	0
05 Oct 02	05 Oct 02	Kopernik Space Education Center	Vestal, NY	0	0	0
05 Oct 02	05 Oct 02	Museum of Science and Industry	Chicago, IL	0	52	0
05 Oct 02	05 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	92	0
05 Oct 02	05 Oct 02	Sky Meadows State Park	Delaplane/Paris, VA	0	150	0
07 Oct 02	07 Oct 02	Maple Grove Middle School	Battle Ground, WA	0	60	0
07 Oct 02	07 Oct 02	NASA Kennedy Space Center	Kennedy Space Center, FL	0	100,020	0
08 Oct 02	10 Oct 02	Ocean County College	Toms River, NJ	0	30	0
08 Oct 02	29 Oct 02	American Museum of Natural History	New York, NY	0	27	0
08 Oct 02	05 Nov 02	American Museum of Natural History	New York, NY	0	25	0
11 Oct 02	11 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	35	0
12 Oct 02	12 Oct 02	University of Hawaii/Windward Community College				
		Kaneohe, HI	0	100	0	
13 Oct 02	13 Oct 02	New Jersey State Museum	Trenton, NJ	0	100,100	0
14 Oct 02	25 Oct 02	University of Chicago	Chicago, IL	0	400	0
15 Oct 02	15 Oct 02	Rocky Mountain Radio League	Denver, CO	0	7	0
16 Oct 02	16 Oct 02	Virginia Air and Space Museum	Hampton, VA	0	4	0
16 Oct 02	20 Oct 02	North Carolina School of Science and Mathematics				
		Durham, NC	0	275	0	
17 Oct 02	17 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	27	0
17 Oct 02	17 Oct 02	St. Philip the Apostle School	Pasadena, CA	0	195	0
18 Oct 02	18 Oct 02	Howard County Public Library	Ellicott City, MD	0	26	0
18 Oct 02	18 Oct 02	Winneconne Elementary School	Winneconne, WI	0	400	0
19 Oct 02	19 Oct 02	Museum of Flight	Seattle, WA	0	19	0
19 Oct 02	20 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	200	0
20 Oct 02	20 Oct 02	Andrews Independent School District	Andrews, TX	0	65	0
20 Oct 02	20 Oct 02	New Jersey State Museum	Trenton, NJ	0	10,100	0
21 Oct 02	21 Oct 02	Cary Elementary School	Cary, NC	0	350	0
21 Oct 02	21 Oct 02	Morrow Observatory	Bedford, IN	0	40	0
21 Oct 02	21 Oct 02	Science Museum of Minnesota	St. Paul, MN	0	16	0
21 Oct 02	21 Oct 02	Winneconne Middle School	Winneconne, WI	0	403	0
21 Oct 02	28 Oct 02	Princeton Community Television, Channel 30/Princeton				
		Princeton, NJ	0	500	0	
22 Oct 02	22 Oct 02	Kansas State University	Salina, KS	0	150	0
22 Oct 02	22 Oct 02	Manatee Community College	Bradenton, FL	0	36	0
22 Oct 02	22 Oct 02	Rocky Mountain Radio League	Denver, CO	0	6	0
23 Oct 02	23 Oct 02	Kansas State University	Salina, KS	0	60	0
23 Oct 02	23 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	175	0
23 Oct 02	23 Oct 02	University of California, Los Angeles	Los Angeles, CA	0	25	0
23 Oct 02	23 Oct 02	Virginia Air and Space Museum	Hampton, VA	0	4	0
25 Oct 02	25 Oct 02	Kopernik Space Education Center	Vestal, NY	0	0	0
25 Oct 02	25 Oct 02	Mojave Mesa Elementary School	Apple Valley, CA	0	56	0
25 Oct 02	25 Oct 02	Rainwater Observatory and Planetarium	French Camp, MS	0	75	0
25 Oct 02	25 Oct 02	Winneconne High School	Winneconne, WI	0	60	0
26 Oct 02	26 Oct 02	Palo Verde Middle School	Phoenix, AZ	0	300	0
28 Oct 02	28 Oct 02	Christa McAuliffe Planetarium	Concord, NH	0	40	0
01 Nov 02	01 Nov 02	Science Museum of Minnesota	St. Paul, MN	0	75	0
04 Nov 02	04 Nov 02	Pioneer Ridge Sixth Grade Center	Independence, MO	0	2,900	0
05 Nov 02	22 Nov 02	Punahou School	Honolulu, HI	0	1,800	0
06 Nov 02	06 Nov 02	Lutz Children's Museum	Manchester, CT	0	10	0

07 Nov 02	07 Nov 02	Wellwood Middle School	Fayetteville, NY	0	75	0
08 Nov 02	08 Nov 02	Mitchell Elementary School	Albuquerque, NM	0	80	0
08 Nov 02	08 Nov 02	U.S. Space and Rocket Center	Huntsville, AL	0	26	0
09 Nov 02	09 Nov 02	Fishheating Creek Campground	Palmdale, FL	0	90	0
09 Nov 02	09 Nov 02	Punahou School	Honolulu, HI	0	80	0
09 Nov 02	09 Nov 02	Punahou School	Honolulu, HI	0	1,500	0
09 Nov 02	09 Nov 02	Punahou School	Honolulu, HI	0	500	0
11 Nov 02	11 Nov 02	Eisenhower Observatory	Hopkins, MN	0	24	0
12 Nov 02	12 Nov 02	Science Museum of Minnesota	St. Paul, MN	0	23	0
13 Nov 02	13 Nov 02	Scottsdale Community College	Scottsdale, AZ	0	125	0
13 Nov 02	13 Nov 02	Virginia Air and Space Museum	Hampton, VA	0	4	0
14 Nov 02	14 Nov 02	Evelyn L. Egan Observatory	Fort Myers, FL	0	50	0
15 Nov 02	15 Nov 02	Northrop High School	Fort Wayne, IN	0	75	0
15 Nov 02	15 Nov 02	Science Museum of Minnesota	St. Paul, MN	0	13	0
16 Nov 02	16 Nov 02	Florida Fish and Wildlife Conservation Commission	West Palm Beach, FL	0	110	0
16 Nov 02	16 Nov 02	Howard County Public Library	Ellicott City, MD	0	26	0
16 Nov 02	16 Nov 02	North Carolina Museum of Life and Science	Durham, NC	0	150	0
18 Nov 02	18 Nov 02	Morrow Observatory	Bedford, IN	0	28	0
18 Nov 02	18 Nov 02	University of California, Los Angeles	Los Angeles, CA	0	25	0
19 Nov 02	19 Nov 02	Afton State Park	Afton, MN	0	550	0
19 Nov 02	19 Nov 02	Rocky Mountain Radio League	Denver, CO	0	6	0
19 Nov 02	19 Nov 02	Science Museum of Minnesota	St. Paul, MN	0	26	0
20 Nov 02	20 Nov 02	Virginia Air and Space Museum	Hampton, VA	0	4	0
21 Nov 02	21 Nov 02	Evelyn L. Egan Observatory	Fort Myers, FL	0	30	0
23 Nov 02	23 Nov 02	Museum of Flight	Seattle, WA	0	100	0
25 Nov 02	05 Dec 02	Northrop High School	Fort Wayne, IN	0	156	0
02 Dec 02	02 Dec 02	University of Nevada Las Vegas	Las Vegas, NV	0	110	0
04 Dec 02	04 Dec 02	Lutz Children's Museum	Manchester, CT	0	8	0
04 Dec 02	04 Dec 02	University of Nebraska at Omaha	Omaha, NE	0	83	0
05 Dec 02	05 Dec 02	Oxnard Street School	North Hollywood, CA	0	60	0
05 Dec 02	05 Dec 02	San Diego State University	San Diego, CA	0	14	0
05 Dec 02	05 Dec 02	University of Nebraska at Omaha	Omaha, NE	0	45	0
06 Dec 02	06 Dec 02	Spokane Astronomical Society	Spokane, WA	0	115,078	0
06 Dec 02	09 Dec 02	Capri Elementary School	Encinitas, CA	0	360	0
07 Dec 02	07 Dec 02	Fishheating Creek Campground	Palmdale, FL	0	120	0
07 Dec 02	07 Dec 02	Museum of Flight	Seattle, WA	0	20	0
11 Dec 02	11 Dec 02	Buchanan Street School	Los Angeles, CA	0	30	0
12 Dec 02	12 Dec 02	John B. Monlux School	North Hollywood, CA	0	40	0
12 Dec 02	12 Dec 02	University of Utah	Salt Lake City, UT	0	106	0
12 Dec 02	13 Dec 02	Northrop High School	Fort Wayne, IN	0	156	0
13 Dec 02	15 Dec 02	PhilCon Science Fiction Convention	Philadelphia, PA	0	50	0
14 Dec 02	14 Dec 02	Rochester Museum and Science Center	Rochester, NY	0	300	0
15 Dec 02	15 Dec 02	Shaker Heights High School	Shaker Heights, OH	0	45	0
17 Dec 02	17 Dec 02	Blandy Hills Elementary School	Milledgeville, GA	0	10	0
17 Dec 02	17 Dec 02	Boonshoft Museum of Discovery	Dayton, OH	0	30	0
17 Dec 02	17 Dec 02	Jefferson Elementary School	Kenosha, WI	0	30	0
17 Dec 02	17 Dec 02	Morrow Observatory	Bedford, IN	0	42	0
17 Dec 02	17 Dec 02	Rocky Mountain Radio League	Denver, CO	0	4	0
17 Dec 02	17 Dec 02	Science Museum of Minnesota	St. Paul, MN	0	19	0
17 Dec 02	17 Dec 02	University of California, Irvine	Irvine, CA	0	92	0
19 Dec 02	19 Dec 02	New York Hall of Science	New York, NY	0	27	0
23 Dec 02	23 Dec 02	Fishheating Creek Campground	Palmdale, FL	0	160	0
28 Dec 02	28 Dec 02	Discovery Science Center	Santa Ana, CA	0	130	0
02 Jan 03	30 Jan 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	371	0
03 Jan 03	03 Jan 03	St. Augustine High School	St. Augustine, FL	0	26	0
04 Jan 03	04 Jan 03	Kapiolani Community College	Honolulu, HI	0	30	0

06 Jan 03	07 Jan 03	University of Texas at El Paso	El Paso, TX	0	45	0
08 Jan 03	08 Jan 03	Kamehameha High School	Honolulu, HI	0	100	0
08 Jan 03	08 Jan 03	Lutz Children's Museum	Manchester, CT	0	12	0
10 Jan 03	10 Jan 03	El Camino College	Torrance, CA	0	55	0
10 Jan 03	10 Jan 03	Kamehameha High School	Honolulu, HI	0	200	0
10 Jan 03	13 Jan 03	Austin High School	El Paso, TX	0	67	0
11 Jan 03	11 Jan 03	American Museum of Natural History	New York, NY	0	19	0
11 Jan 03	11 Jan 03	Fishheating Creek Campground	Palmdale, FL	0	30	0
11 Jan 03	11 Jan 03	New Jersey State Museum	Trenton, NJ	0	12,000	0
11 Jan 03	11 Jan 03	Young Astronauts	Spokane, WA	0	6	0
11 Jan 03	12 Jan 03	New Jersey State Museum	Trenton, NJ	0	30	0
12 Jan 03	12 Jan 03	New Jersey State Museum	Trenton, NJ	0	12,000	0
13 Jan 03	03 Mar 03	Wheelersburg Elementary School	Wheelersburg, OH	0	12	0
15 Jan 03	16 Jan 03	Orlando Sentinel	Orlando, FL	0	1,500	0
15 Jan 03	16 Jan 03	University of California, San Diego	La Jolla, CA	0	20	0
16 Jan 03	16 Jan 03	American Museum of Natural History	New York, NY	0	250	0
16 Jan 03	16 Jan 03	New York Hall of Science	New York, NY	0	35	0
16 Jan 03	16 Jan 03	University of Colorado, Boulder	Boulder, CO	0	70	0
16 Jan 03	13 Feb 03	American Museum of Natural History	New York, NY	0	26	0
16 Jan 03	15 Feb 03	American Museum of Natural History	New York, NY	0	27	0
17 Jan 03	17 Jan 03	California State University, Bakersfield	Bakersfield, CA	0	38	0
17 Jan 03	17 Feb 03	University of Mississippi	Oxford, MS	0	70	0
18 Jan 03	18 Jan 03	Imaginarium Science Discovery Center	Anchorage, AK	0	11	0
19 Jan 03	19 Jan 03	North Carolina Museum of Natural Sciences	Raleigh, NC	0	1800	0
20 Jan 03	20 Jan 03	Morrow Observatory	Bedford, IN	0	35	0
21 Jan 03	21 Jan 03	Rocky Mountain Radio League	Denver, CO	0	10	0
23 Jan 03	23 Jan 03	Olympic National Park	Port Angeles, WA	0	30	0
24 Jan 03	24 Jan 03	Mitchell Elementary School	Albuquerque, NM	0	75	0
25 Jan 03	25 Jan 03	University of Hawaii at Hilo	Hilo, HI	0	100	0
25 Jan 03	25 Jan 03	University of Redlands	Redlands, CA	0	20	0
27 Jan 03	27 Jan 03	University of Utah	Salt Lake City, UT	0	18,000	0
28 Jan 03	28 Jan 03	University of Hawaii at Hilo	Hilo, HI	0	1,000	0
01 Feb 03	01 Feb 03	Chabot Space and Science Center	Oakland, CA	0	90	0
01 Feb 03	01 Feb 03	Discover Center Science Museum	Fort Collins, CO	0	500	0
01 Feb 03	01 Feb 03	WNYC Public Radio/TV Stations	New York, NY	0	500,000	0
03 Feb 03	28 Feb 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	244	0
05 Feb 03	05 Feb 03	California Academy of Sciences	San Francisco, CA	0	200	0
05 Feb 03	15 Oct 03	Ocean County College	Toms River, NJ	0	12,000	0
06 Feb 03	06 Feb 03	Casper Planetarium	Casper, WY	0	4	0
06 Feb 03	06 Feb 03	New York Hall of Science	New York, NY	0	32	0
07 Feb 03	07 Feb 03	Alta Vista Middle School	Carlsbad, NM	0	90	0
07 Feb 03	07 Feb 03	Casper Planetarium	Casper, WY	0	51	0
07 Feb 03	07 Feb 03	Lockwood Park Observatory	Rockford, IL	0	58	0
07 Feb 03	07 Feb 03	Rainwater Observatory and Planetarium	French Camp, MS	0	142	0
11 Feb 03	11 Feb 03	Casper Planetarium	Casper, WY	0	52	0
11 Feb 03	11 Feb 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	40	0
11 Feb 03	11 Feb 03	The Boeing Company	Everett, WA	0	17	0
11 Feb 03	11 Feb 03	University of Arkansas	Little Rock, AR	0	35	0
12 Feb 03	12 Feb 03	Casper Planetarium	Casper, WY	0	51	0
12 Feb 03	12 Feb 03	Shaker Heights High School	Shaker Heights, OH	0	25	0
13 Feb 03	13 Feb 03	American Museum of Natural History	New York, NY	0	250	0
15 Feb 03	15 Feb 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	36	0
15 Feb 03	15 Feb 03	Museum of Flight	Seattle, WA	0	100	0
15 Feb 03	15 Feb 03	Shaker Heights High School	Shaker Heights, OH	0	90	0
15 Feb 03	15 Feb 03	Woods Learning Center	Casper, WY	0	36	0
18 Feb 03	18 Feb 03	Arkansas Tech University	Russellville, AR	0	35	0
18 Feb 03	18 Feb 03	Rocky Mountain Radio League	Denver, CO	0	8	0

19 Feb 03	19 Feb 03	Casper Planetarium	Casper, WY	0	49	0
19 Feb 03	19 Feb 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
20 Feb 03	20 Feb 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	23	0
20 Feb 03	20 Feb 03	New York Hall of Science	New York, NY	0	42	0
21 Feb 03	21 Feb 03	Tan-Tar-A-Resort	Osage Beach, MO	0	2,270	0
22 Feb 03	22 Feb 03	Howard County Public Library	Ellicott City, MD	0	0	0
22 Feb 03	22 Feb 03	Mary Ann Mongan Library	Covington, KY	0	10	0
22 Feb 03	22 Feb 03	San Diego Aerospace Museum	San Diego, CA	0	1,640	0
22 Feb 03	22 Feb 03	University of North Texas	Denton, TX	0	0	0
22 Feb 03	22 Feb 03	Woods Learning Center	Casper, WY	0	36	0
22 Feb 03	31 May 03	University of North Texas	Denton, TX	0	3,500	0
26 Feb 03	26 Feb 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
27 Feb 03	27 Mar 03	American Museum of Natural History	New York, NY	0	27	0
28 Feb 03	28 Feb 03	Chabot Space and Science Center	Oakland, CA	0	100	0
03 Mar 03	31 Mar 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	616	0
04 Mar 03	04 Mar 03	Binghamton University	Vestal, NY	0	325	0
05 Mar 03	05 Mar 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
05 Mar 03	16 Mar 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	30	0
06 Mar 03	06 Mar 03	New York Hall of Science	New York, NY	0	51	0
06 Mar 03	06 Mar 03	Science Museum of Minnesota	St. Paul, MN	0	20	0
06 Mar 03	26 Apr 03	Casper Planetarium	Casper, WY	0	168	0
07 Mar 03	26 Apr 03	Chabot Space and Science Center	Oakland, CA	0	1,291	0
08 Mar 03	08 Mar 03	Woods Learning Center	Casper, WY	0	36	0
12 Mar 03	12 Mar 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
13 Mar 03	13 Mar 03	Bowie Blade-News	Bowie, MD	0	50,000	0
13 Mar 03	13 Mar 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
14 Mar 03	14 Mar 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	15	0
14 Mar 03	14 Mar 03	Museum of Science and Industry	Tampa, FL	0	15	0
14 Mar 03	14 Mar 03	New York Hall of Science	New York, NY	0	17	0
14 Mar 03	14 Mar 03	Orange County Astronomers	Orange, CA	0	300	0
14 Mar 03	14 Mar 03	University of Utah	Salt Lake City, UT	0	18,000	0
15 Mar 03	15 Mar 03	Fort Hood Army Base	Fort Hood, TX	0	300	0
15 Mar 03	15 Mar 03	San Jose State University	San Jose, CA	0	60	0
17 Mar 03	17 Mar 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	5	0
17 Mar 03	17 Mar 03	Eisenhower Observatory	Hopkins, MN	0	17	0
17 Mar 03	17 Mar 03	Kern County Superintendent of Schools Learning Center	Bakersfield, CA	0	23	0
17 Mar 03	17 Mar 03	Oregon Museum of Science and Industry	Portland, OR	0	200	0
17 Mar 03	18 Mar 03	Shaker Heights High School	Shaker Heights, OH	0	80	0
18 Mar 03	18 Mar 03	Boonshoft Museum of Discovery	Dayton, OH	0	40	0
18 Mar 03	18 Mar 03	Rocky Mountain Radio League	Denver, CO	0	8	0
19 Mar 03	19 Mar 03	Norwich Free Academy Television Station	Norwich, CT	0	0	0
20 Mar 03	20 Mar 03	Meridian College	Meridian, MS	0	300	0
20 Mar 03	20 Mar 03	New York Hall of Science	New York, NY	0	44	0
20 Mar 03	20 Mar 03	Rochester Museum and Science Center	Rochester, NY	0	500	0
20 Mar 03	20 Mar 03	Science Museum of Minnesota	St. Paul, MN	0	25	0
21 Mar 03	21 Mar 03	New York Hall of Science	New York, NY	0	22	0
21 Mar 03	21 Mar 03	Orange Coast College	Costa Mesa, CA	0	0	0
21 Mar 03	21 Mar 03	Orange Coast College	Costa Mesa, CA	0	250	0
22 Mar 03	22 Mar 03	Howard County Public Library	Ellicott City, MD	0	25	0
24 Mar 03	24 Mar 03	Fairfax County Public Schools	Falls Church, VA	0	250	0
25 Mar 03	25 Mar 03	Rochester Museum and Science Center	Rochester, NY	0	400	0
26 Mar 03	26 Mar 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	8	0
26 Mar 03	26 Mar 03	Northcountry Planetarium	Plattsburgh, NY	0	26	0
26 Mar 03	26 Mar 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
27 Mar 03	27 Mar 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	65	0
27 Mar 03	27 Mar 03	Ocean County College	Toms River, NJ	0	15	0

27 Mar 03	27 Mar 03	Science Museum of Minnesota	St. Paul, MN	0	25	0
29 Mar 03	29 Mar 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	5	0
29 Mar 03	29 Mar 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	38	0
29 Mar 03	29 Mar 03	California State University, Los Angeles	Los Angeles, CA	0	40	0
31 Mar 03	31 Mar 03	Century High School	Bismarck, ND	0	431	0
31 Mar 03	31 Mar 03	Shaker Heights High School	Shaker Heights, OH	0	50	0
01 Apr 03	01 Apr 03	Bismarck High School	Bismarck, ND	0	331	0
01 Apr 03	01 Apr 03	Chabot Space and Science Center	Oakland, CA	0	20	0
01 Apr 03	01 Apr 03	Rocky Mountain Radio League	Denver, CO	0	5	0
01 Apr 03	30 Apr 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	528	0
02 Apr 03	02 Apr 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
03 Apr 03	03 Apr 03	New York Hall of Science	New York, NY	0	45	0
03 Apr 03	03 Apr 03	Science Museum of Minnesota	St. Paul, MN	0	30	0
04 Apr 03	06 Apr 03	Carnegie Science Center	Pittsburgh, PA	0	3,500	0
07 Apr 03	21 Apr 03	Casper Planetarium	Casper, WY	0	919	0
08 Apr 03	08 Apr 03	Mid-Continent Public Library	Liberty, MO	0	560	0
09 Apr 03	09 Apr 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
09 Apr 03	30 Apr 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	10	0
10 Apr 03	10 Apr 03	Chabot Space and Science Center	Oakland, CA	0	100	0
10 Apr 03	10 Apr 03	Lakeland College	Howards Grove, WI	0	29	0
11 Apr 03	11 Apr 03	Museum of Science and Industry	Tampa, FL	0	8	0
12 Apr 03	12 Apr 03	Lockwood Park Observatory	Rockford, IL	0	30	0
12 Apr 03	12 Apr 03	Pennsylvania State University	University Park, PA	0	60	0
12 Apr 03	12 Apr 03	Riverside Astronomical Society	Riverside, CA	0	60	0
12 Apr 03	12 Apr 03	Smithsonian National Air and Space Museum	Washington, DC	0	150	0
15 Apr 03	15 Apr 03	Buchanan Street School	Los Angeles, CA	0	250	0
15 Apr 03	15 Apr 03	Rocky Mountain Radio League	Denver, CO	0	11	0
16 Apr 03	16 Apr 03	Norwich Free Academy Television Station	Norwich, CT	0	2,000	0
19 Apr 03	19 Apr 03	Casper Planetarium	Casper, WY	0	52	0
19 Apr 03	19 Apr 03	Punahou School	Honolulu, HI	0	200	0
21 Apr 03	21 Apr 03	Casper Planetarium	Casper, WY	0	11	0
21 Apr 03	21 Apr 03	Morrow Observatory	Bedford, IN	0	28	0
21 Apr 03	21 Apr 03	Punahou School	Honolulu, HI	0	100	0
21 Apr 03	21 Apr 03	Wellwood Middle School	Fayetteville, NY	0	75	0
22 Apr 03	22 Apr 03	Casper Planetarium	Casper, WY	0	54	0
22 Apr 03	22 Apr 03	Lutz Children's Museum	Manchester, CT	0	14	0
22 Apr 03	22 Apr 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	62	0
22 Apr 03	22 Apr 03	University of Colorado, Boulder	Boulder, CO	0	26	0
22 Apr 03	22 Apr 03	University of North Carolina at Pembroke	Pembroke, NC	0	20	0
23 Apr 03	23 Apr 03	Adams Elementary School	Fergus Falls, MN	0	131	0
23 Apr 03	23 Apr 03	Buchanan Street School	Los Angeles, CA	0	40	0
23 Apr 03	23 Apr 03	Casper Planetarium	Casper, WY	0	51	0
23 Apr 03	23 Apr 03	Norwich Free Academy Television Station	Norwich, CT	0	5,000	0
23 Apr 03	23 Apr 03	Reuben H. Fleet Science Center	San Diego, CA	0	34	0
24 Apr 03	24 Apr 03	Casper Planetarium	Casper, WY	0	53	0
24 Apr 03	24 Apr 03	University of North Texas	Denton, TX	0	300	0
25 Apr 03	25 Apr 03	Casper Planetarium	Casper, WY	0	110	0
26 Apr 03	26 Apr 03	Austin High School	El Paso, TX	0	22	0
26 Apr 03	26 Apr 03	Bays Mountain Planetarium	Kingsport, TN	0	200	0
26 Apr 03	26 Apr 03	New England Air Museum	Windsor Locks, CT	0	160	0
26 Apr 03	26 Apr 03	University of Missouri-Kansas City	Kansas City, MO	0	230	0
28 Apr 03	28 Apr 03	Chabot Space and Science Center	Oakland, CA	0	200	0
28 Apr 03	28 Apr 03	Oakland Public School	Oakland, NE	0	365	0
28 Apr 03	28 Apr 03	Tekamah Public School	Tekamah, NE	0	420	0
29 Apr 03	29 Apr 03	Shaker Heights High School	Shaker Heights, OH	0	24	0
30 Apr 03	30 Apr 03	Norwich Free Academy Television Station	Norwich, CT	0	5,000	0
30 Apr 03	30 Apr 03	San Diego State University	San Diego, CA	0	78	0

01 May 03	01 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	8	0
01 May 03	01 May 03	Mountain View Elementary School	Elko, NV	0	100	0
02 May 03	02 May 03	Chabot Space and Science Center	Oakland, CA	0	18	0
02 May 03	02 May 03	Lockheed Martin Space Systems	Littleton, CO	0	27	0
02 May 03	02 May 03	Russell C. Davis Planetarium	Jackson, MS	0	1,005	0
02 May 03	02 May 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
02 May 03	03 May 03	Ward Beecher Planetarium	Youngstown, OH	0	53	0
03 May 03	03 May 03	Brownsville Public Library	Brownsville, TX	0	0	0
03 May 03	03 May 03	Hilo Shopping Mall	Hilo, HI	0	1200	0
03 May 03	03 May 03	University of Hawaii Windward Community College	Kaneohe, HI	0	1,000	0
04 May 03	04 May 03	New Jersey State Museum	Trenton, NJ	0	200	0
05 May 03	16 May 03	Northrop High School	Fort Wayne, IN	0	550	0
06 May 03	06 May 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	140	0
07 May 03	07 May 03	Shaker Heights High School	Shaker Heights, OH	0	90	0
07 May 03	07 May 03	Silver Valley High School	, CA	0	90	0
09 May 03	09 May 03	Museum of Science and Industry	Tampa, FL	0	1,000	0
09 May 03	14 Jun 03	Chabot Space and Science Center	Oakland, CA	0	178	0
10 May 03	10 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	6	0
10 May 03	10 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	18	0
10 May 03	10 May 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	38	0
10 May 03	10 May 03	Andrews Independent School District	Andrews, TX	0	45	0
10 May 03	10 May 03	California Academy of Sciences	San Francisco, CA	0	400	0
10 May 03	10 May 03	Merritt Square Mall	Merritt Island, FL	0	1,000	0
10 May 03	10 May 03	Museum of Science	Boston, MA	0	75	0
10 May 03	10 May 03	Museum of Science and History	Jacksonville, FL	0	900	0
10 May 03	10 May 03	Museum of Science and Industry	Tampa, FL	0	45	0
10 May 03	10 May 03	Science City at Union Station	Kansas City, MO	0	1,000	0
10 May 03	10 May 03	Smithsonian National Air and Space Museum	Washington, DC	0	300	0
10 May 03	10 May 03	Somerset County 4-H Fair	Bridgewater, NJ	0	0	0
10 May 03	11 May 03	Pacific Science Center	Seattle, WA	0	0	0
10 May 03	11 May 03	Pacific Science Center	Seattle, WA	0	92	0
10 May 03	11 May 03	The New Detroit Science Center	Detroit, MI	0	900	0
11 May 03	11 May 03	New Jersey State Museum	Trenton, NJ	0	0	0
12 May 03	12 May 03	Austin High School	El Paso, TX	0	82	0
12 May 03	12 May 03	Twin City Amateur Astronomers	Stanford, IL	0	30	0
13 May 03	13 May 03	Lutz Children's Museum	Manchester, CT	0	2	0
14 May 03	14 May 03	Morrow Observatory	Bedford, IN	0	35	0
14 May 03	14 May 03	Norwich Free Academy Television Station	Norwich, CT	0	5,000	0
15 May 03	15 May 03	Bowie Blade-News	Bowie, MD	0	50,000	0
15 May 03	15 May 03	Buchanan Street School	Los Angeles, CA	0	40	0
15 May 03	15 May 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	64	0
15 May 03	15 May 03	Eisenhower Observatory	Hopkins, MN	0	0	0
15 May 03	15 May 03	Eisenhower Observatory	Hopkins, MN	0	350	0
15 May 03	15 May 03	Florida Museum of Natural History	Gainesville, FL	0	10,200	0
15 May 03	15 May 03	Maple Grove Middle School	Battle Ground, WA	0	15	0
15 May 03	16 May 03	Morrow Observatory	Bedford, IN	0	80	0
15 May 03	16 May 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	7,000	0
17 May 03	17 May 03	Arizona Science Center	Phoenix, AZ	0	1,000	0
17 May 03	17 May 03	Museum of Flight	Seattle, WA	0	120	0
18 May 03	18 May 03	Prince William County Central Library	Manassas, VA	0	55	0
20 May 03	20 May 03	Rocky Mountain Radio League	Denver, CO	0	10	0
21 May 03	21 May 03	Norwich Free Academy Television Station	Norwich, CT	0	5,000	0
21 May 03	22 May 03	International Amateur-Professional Photoelectric Photometry, Western Division	Big Bear Lake, CA	0	65	0
21 May 03	23 May 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	240	0
23 May 03	23 May 03	Stanislaus County Office of Education	Modesto, CA	0	30	0

24 May 03	24 May 03	Olympic National Park	Port Angeles, WA	0	200	0
29 May 03	29 May 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	60	0
31 May 03	31 May 03	Fairfax County Library	Chantilly, VA	0	40	0
31 May 03	31 May 03	Shaker Heights High School	Shaker Heights, OH	0	46	0
02 Jun 03	02 Jun 03	McKee Intermediate School	Bakersfield, CA	0	210	0
05 Jun 03	05 Jun 03	Bowie Blade-News	Bowie, MD	0	50,000	0
05 Jun 03	06 Jun 03	Kansas Cosmosphere and Space Center	Hutchinson, KS	0	78	0
06 Jun 03	06 Jun 03	Wilderness Center	Wilmot, OH	0	65	0
08 Jun 03	08 Jun 03	Jetty Park	Cocoa Beach, FL	0	2,000	0
08 Jun 03	01 Sep 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	10,000	0
10 Jun 03	10 Jun 03	Lutz Children's Museum	Manchester, CT	0	2	0
10 Jun 03	11 Jun 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	48	0
12 Jun 03	12 Jun 03	Capri Elementary School	Encinitas, CA	0	60	0
12 Jun 03	18 Jun 03	Middletown Times Star Newspaper	Middletown, CA	0	2,000	0
13 Jun 03	13 Jun 03	Museum of Science and Industry	Tampa, FL	0	6	0
16 Jun 03	16 Jun 03	Morrow Observatory	Bedford, IN	0	28	0
16 Jun 03	20 Jun 03	Drake Planetarium	Cincinnati, OH	0	45	0
17 Jun 03	17 Jun 03	Rocky Mountain Radio League	Denver, CO	0	3	0
19 Jun 03	19 Jun 03	Texas Tech University	Lubbock, TX	0	65	0
19 Jun 03	19 Jun 03	Texas Tech University	Lubbock, TX	0	25	0
19 Jun 03	21 Jun 03	Muncie School District	Muncie, IN	0	400	0
20 Jun 03	22 Jun 03	Noel Wien Library	Fairbanks, AK	0	35	0
21 Jun 03	21 Jun 03	Sky Meadows State Park	Delaplane/Paris, VA	0	17	0
24 Jun 03	25 Jun 03	Jetty Park	Cocoa Beach, FL	0	7,500	0
26 Jun 03	26 Jun 03	Challenger Center for Space Science Education	Alexandria, VA	0	23	0
26 Jun 03	26 Jun 03	Kalamazoo Valley Museum	Kalamazoo, MI	0	23	0
26 Jun 03	02 Jul 03	Rust College	Holly Springs, MS	0	57	0
27 Jun 03	15 Jul 03	Wheeling Jesuit University	Wheeling, WV	0	0	0
30 Jun 03	30 Jun 03	University of California, Irvine	Irvine, CA	0	235	0
02 Jul 03	02 Jul 03	Arizona State University	Tempe, AZ	0	72	0
02 Jul 03	02 Jul 03	Northcountry Planetarium	Plattsburgh, NY	0	20	0
03 Jul 03	03 Jul 03	Shaker Heights High School	Shaker Heights, OH	0	32	0
08 Jul 03	08 Jul 03	Muncie School District	Muncie, IN	0	90	0
08 Jul 03	13 Jul 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	690	0
08 Jul 03	30 Sep 03	Ocean County College	Toms River, NJ	0	500	0
11 Jul 03	11 Jul 03	Museum of Science and Industry	Tampa, FL	0	12	0
11 Jul 03	11 Jul 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
12 Jul 03	12 Jul 03	Chabot Space and Science Center	Oakland, CA	0	15	0
13 Jul 03	18 Jul 03	Plymouth State University	Plymouth, NH	0	124	0
14 Jul 03	18 Jul 03	Space Center Houston	Houston, TX	0	28	0
15 Jul 03	15 Jul 03	Rocky Mountain Radio League	Denver, CO	0	9	0
17 Jul 03	17 Jul 03	Montana State University	Bozeman, MT	0	22	0
18 Jul 03	18 Jul 03	North Woods Park	Sumner, IA	0	60	0
19 Jul 03	19 Jul 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	20	0
19 Jul 03	19 Jul 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	32	0
19 Jul 03	19 Jul 03	Museum of Science and History	Jacksonville, FL	0	600	0
19 Jul 03	19 Jul 03	Sky Meadows State Park	Delaplane/Paris, VA	0	228	0
20 Jul 03	10 Jul 03	Ocean County College	Toms River, NJ	0	6	0
21 Jul 03	21 Jul 03	Morrow Observatory	Bedford, IN	0	35	0
23 Jul 03	23 Jul 03	University of North Texas	Denton, TX	0	0	0
24 Jul 03	24 Jul 03	Fayetteville Elementary School	Fayetteville, NY	0	130	0
25 Jul 03	25 Jul 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
26 Jul 03	26 Jul 03	Smithsonian National Air and Space Museum	Washington, DC	0	90	0
28 Jul 03	01 Aug 03	Pennsylvania State University	University Park, PA	0	18	0
28 Jul 03	25 Aug 03	University of California, San Diego	La Jolla, CA	0	1	0
30 Jul 03	30 Jul 03	University of Puerto Rico at Mayagüez	Mayagüez, PR	0	10	0
04 Aug 03	08 Aug 03	University of California, Santa Cruz	Santa Cruz, CA	0	30	0

04 Aug 03	03 Sep 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	357	0
05 Aug 03	05 Aug 03	Chabot Space and Science Center	Oakland, CA	0	9	0
06 Aug 03	06 Aug 03	Howard County Public Library	Ellicott City, MD	0	34	0
07 Aug 03	07 Aug 03	Bowie Blade-News	Bowie, MD	0	50,000	0
07 Aug 03	07 Aug 03	Ward Beecher Planetarium	Youngstown, OH	0	53	0
08 Aug 03	08 Aug 03	Howard County Public Library	Ellicott City, MD	0	26	0
08 Aug 03	08 Aug 03	Museum of Science and Industry	Tampa, FL	0	14	0
09 Aug 03	09 Aug 03	Chabot Space and Science Center	Oakland, CA	0	7	0
09 Aug 03	09 Aug 03	Olympic National Park	Port Angeles, WA	0	0	0
09 Aug 03	09 Aug 03	San Bernardino County Museum	Redlands, CA	0	0	0
09 Aug 03	09 Aug 03	San Bernardino County Museum	Redlands, CA	0	700	0
10 Aug 03	10 Aug 03	Chabot Space and Science Center	Oakland, CA	0	8	0
12 Aug 03	12 Aug 03	Howard County Public Library	Ellicott City, MD	0	9	0
12 Aug 03	12 Aug 03	San Bernardino County Museum	Redlands, CA	0	300	0
14 Aug 03	14 Aug 03	Howard County Public Library	Ellicott City, MD	0	12	0
14 Aug 03	14 Aug 03	University of California, Irvine	Irvine, CA	0	145	0
15 Aug 03	15 Aug 03	Muncie School District	Muncie, IN	0	83	0
15 Aug 03	17 Aug 03	University of North Texas	Denton, TX	0	0	0
16 Aug 03	16 Aug 03	San Diego County Office of Education	San Diego, CA	0	42	0
16 Aug 03	16 Aug 03	San Diego County Office of Education	San Diego, CA	0	60	0
19 Aug 03	19 Aug 03	San Bernardino County Museum	Redlands, CA	0	0	0
19 Aug 03	19 Aug 03	San Bernardino County Museum	Redlands, CA	0	0	0
19 Aug 03	04 Sep 03	Eisenhower Observatory	Hopkins, MN	0	50	0
20 Aug 03	07 Sep 03	University of Tennessee	Knoxville, TN	0	434,000	0
21 Aug 03	21 Aug 03	University of California, Irvine	Irvine, CA	0	135	0
22 Aug 03	22 Aug 03	Ocean County College	Toms River, NJ	0	50	0
22 Aug 03	22 Aug 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
22 Aug 03	22 Aug 03	University of California, Irvine	Irvine, CA	0	35	0
22 Aug 03	24 Aug 03	Ocean County College	Toms River, NJ	0	300	0
22 Aug 03	02 Sep 03	Ocean County College	Toms River, NJ	0	100	0
23 Aug 03	23 Aug 03	Andrews Independent School District	Andrews, TX	0	150	0
23 Aug 03	23 Aug 03	Los Angeles County Fairgrounds	Pomona, CA	0	100,000	0
23 Aug 03	23 Aug 03	Ocean County College	Toms River, NJ	0	20	0
23 Aug 03	23 Aug 03	Sky Meadows State Park	Delaplane/Paris, VA	0	712	0
25 Aug 03	22 Aug 03	Palisade High School	Palisade, CO	0	140	0
25 Aug 03	25 Aug 03	Jetty Park	Cocoa Beach, FL	0	1,500	0
25 Aug 03	25 Aug 03	University of North Texas	Denton, TX	0	0	0
26 Aug 03	26 Aug 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	188	0
26 Aug 03	26 Aug 03	Fleming Middle School	Grants Pass, OR	0	26	0
26 Aug 03	28 Sep 03	Ball State University	Muncie, IN	0	3,000	0
27 Aug 03	27 Aug 03	Austin High School	El Paso, TX	0	1,100	0
27 Aug 03	27 Aug 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	30	0
27 Aug 03	27 Aug 03	Coast to Coast AM	Palm Coast, FL	0	900,000	0
27 Aug 03	27 Aug 03	Exploration Place	Wichita, KS	0	550	0
27 Aug 03	27 Aug 03	Fleming Middle School	Grants Pass, OR	0	45	0
27 Aug 03	27 Aug 03	Museum of Science and History	Jacksonville, FL	0	1,200	0
27 Aug 03	27 Aug 03	Ocean County College	Toms River, NJ	0	500	0
27 Aug 03	27 Aug 03	Russell Elementary School	Rumney, NH	0	75	0
27 Aug 03	27 Aug 03	University of Colorado, Boulder	Boulder, CO	0	75	0
27 Aug 03	27 Aug 03	University of North Texas	Denton, TX	0	3,000	0
27 Aug 03	27 Aug 03	Virginia Living Museum	Newport News, VA	0	60	0
27 Aug 03	28 Aug 03	Norwich Free Academy Television Station	Norwich, CT	0	0	0
27 Aug 03	01 Sep 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	2,900	0
27 Aug 03	05 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	15,000	0
27 Aug 03	13 Sep 03	Rainwater Observatory and Planetarium	French Camp, MS	0	400	0
29 Aug 03	29 Aug 03	Cincinnati Observatory Center	Cincinnati, OH	0	40	0
29 Aug 03	29 Aug 03	Mahoning County Fair	Canfield, OH	0	200	0

29 Aug 03	30 Aug 03	Evelyn L. Egan Observatory	Fort Myers, FL	0	1,800	0
30 Aug 03	30 Aug 03	Fishheating Creek Campground	Palmdale, FL	0	50	0
30 Aug 03	30 Aug 03	Howard County Public Library	Ellicott City, MD	0	9	0
30 Aug 03	30 Aug 03	Museum of Science and History	Jacksonville, FL	0	1,500	0
30 Aug 03	26 Sep 03	Florida Museum of Natural History	Gainesville, FL	0	55,500	0
01 Sep 03	04 Sep 03	Calusa Nature Center and Planetarium	Fort Myers, FL	0	82	0
04 Sep 03	04 Sep 03	Bowie Blade-News	Bowie, MD	0	50,000	0
04 Sep 03	04 Sep 03	Fleming Middle School	Grants Pass, OR	0	72	0
04 Sep 03	04 Sep 03	Grout Museum of History and Science	Waterloo, IA	0	150	0
04 Sep 03	04 Sep 03	Science Museum of Minnesota	St. Paul, MN	0	100	0
04 Sep 03	05 Sep 03	Morrow Observatory	Bedford, IN	0	250	0
05 Sep 03	05 Sep 03	Capri Elementary School	Encinitas, CA	0	120	0
05 Sep 03	05 Sep 03	Eisenhower Observatory	Hopkins, MN	0	50	0
05 Sep 03	05 Sep 03	New Mexico Museum of Space History	Alamogordo, NM	0	211	0
05 Sep 03	06 Sep 03	Kensington Metropark	Brighton, MI	0	12,000	0
06 Sep 03	06 Sep 03	Cincinnati Observatory Center	Cincinnati, OH	0	200	0
06 Sep 03	13 Sep 03	Cincinnati Observatory Center	Cincinnati, OH	0	0	0
08 Sep 03	08 Sep 03	Muncie School District	Muncie, IN	0	157	0
08 Sep 03	08 Sep 03	Museum of Southwest	Midland, TX	0	70	0
10 Sep 03	10 Sep 03	North Hills High School	Pittsburgh, PA	0	4	0
11 Sep 03	11 Sep 03	Cincinnati Observatory Center	Cincinnati, OH	0	45	0
11 Sep 03	11 Sep 03	Kalamazoo Valley Museum	Kalamazoo, MI	0	16	0
12 Sep 03	12 Sep 03	Eisenhower Observatory	Hopkins, MN	0	300	0
12 Sep 03	12 Sep 03	Floyd Central High School	Floyds Knobs, IN	0	70	0
12 Sep 03	12 Sep 03	Museum of Science and Industry	Tampa, FL	0	22	0
12 Sep 03	12 Sep 03	New Mexico Museum of Space History	Alamogordo, NM	0	105	0
13 Sep 03	13 Sep 03	Challenger Learning Center	Peoria, AZ	0	500	0
13 Sep 03	13 Sep 03	Cincinnati Observatory Center	Cincinnati, OH	0	45	0
14 Sep 03	14 Sep 03	Arizona Science Center	Phoenix, AZ	0	100	0
15 Sep 03	15 Sep 03	Andrews Independent School District	Andrews, TX	0	200	0
15 Sep 03	15 Sep 03	Noble Planetarium	Fort Worth, TX	0	30	0
15 Sep 03	15 Sep 03	University of North Carolina at Pembroke	Pembroke, NC	0	20	0
16 Sep 03	16 Sep 03	Noble Planetarium	Fort Worth, TX	0	115	0
16 Sep 03	16 Sep 03	Rocky Mountain Radio League	Denver, CO	0	5	0
17 Sep 03	17 Sep 03	Garfield Heights High School	Garfield Heights, OH	0	1	0
17 Sep 03	17 Sep 03	KUAT-TV, Channel 6/Tucson	Tucson, AZ	0	10,000	0
17 Sep 03	17 Sep 03	Noble Planetarium	Fort Worth, TX	0	55	0
18 Sep 03	18 Sep 03	Environmental Studies Center	Mobile, AL	0	100	0
18 Sep 03	18 Sep 03	Kalamazoo Valley Museum	Kalamazoo, MI	0	30	0
18 Sep 03	18 Sep 03	Noble Planetarium	Fort Worth, TX	0	21	0
19 Sep 03	19 Sep 03	New Mexico Museum of Space History	Alamogordo, NM	0	107	0
19 Sep 03	19 Sep 03	Noble Planetarium	Fort Worth, TX	0	115	0
19 Sep 03	21 Sep 03	Bays Mountain Planetarium	Kingsport, TN	0	85	0
20 Sep 03	20 Sep 03	Chabot Space and Science Center	Oakland, CA	0	9	0
20 Sep 03	20 Sep 03	Museum of Flight	Seattle, WA	0	65	0
20 Sep 03	20 Sep 03	Rochester Museum and Science Center	Rochester, NY	0	50	0
20 Sep 03	21 Sep 03	Sunriver Nature Center and Observatory	Sunriver, OR	0	210	0
21 Sep 03	21 Sep 03	Adler Planetarium and Astronomy Museum	Chicago, IL	0	120	0
21 Sep 03	21 Sep 03	Andrews Independent School District	Andrews, TX	0	65	0
21 Sep 03	21 Sep 03	Chabot Space and Science Center	Oakland, CA	0	12	0
21 Sep 03	21 Sep 03	EcoTarium	Worcester, MA	0	81	0
21 Sep 03	21 Sep 03	Morrow Observatory	Bedford, IN	0	45	0
21 Sep 03	21 Sep 03	Muncie School District	Muncie, IN	0	300	0
21 Sep 03	21 Sep 03	Museum of Science and History	Jacksonville, FL	0	200	0
21 Sep 03	21 Sep 03	New Jersey State Museum	Trenton, NJ	0	200	0
21 Sep 03	21 Sep 03	New Mexico Museum of Space History	Alamogordo, NM	0	36	0
21 Sep 03	21 Sep 03	San Bernardino County Museum	Redlands, CA	0	75	0

21 Sep 03	21 Sep 03	Shaker Heights High School	Shaker Heights, OH	0	52	0
21 Sep 03	21 Sep 03	University of Arizona	Tucson, AZ	0	550,349	0
21 Sep 03	21 Sep 03	University of Arizona	Tucson, AZ	0	200	0
21 Sep 03	21 Sep 03	University of North Carolina at Pembroke	Pembroke, NC	0	23	0
22 Sep 03	22 Sep 03	Challenger Learning Center	Peoria, AZ	0	100	0
22 Sep 03	22 Sep 03	Palisade High School	Palisade, CO	0	55	0
22 Sep 03	22 Sep 03	Pioneer Ridge Sixth Grade Center	Independence, MO	0	515	0
24 Sep 03	24 Sep 03	Environmental Studies Center	Mobile, AL	0	92	0
25 Sep 03	25 Sep 03	Brownsville Public Library	Brownsville, TX	0	135	0
25 Sep 03	25 Sep 03	Capri Elementary School	Encinitas, CA	0	90	0
25 Sep 03	25 Sep 03	Maryland Science Center	Baltimore, MD	0	14	27
26 Sep 03	26 Sep 03	Arizona State University	Tempe, AZ	0	100	0
26 Sep 03	26 Sep 03	Kopernik Space Education Center	Vestal, NY	0	30	0
26 Sep 03	26 Sep 03	Stanislaus County Office of Education	Modesto, CA	0	30	0
27 Sep 03	01 Feb 04	University of North Texas	Denton, TX	0	330	0
28 Sep 03	28 Sep 03	Arizona Science Center	Phoenix, AZ	0	100	0
28 Sep 03	28 Sep 03	Drake Planetarium	Cincinnati, OH	0	45	0
28 Sep 03	28 Sep 03	New Jersey State Museum	Trenton, NJ	0	200	0
30 Sep 03	30 Sep 03	Environmental Studies Center	Mobile, AL	0	100	0
30 Sep 03	30 Sep 03	Lawrence Livermore National Laboratory	Livermore, CA	0	40	0
30 Sep 03	30 Sep 03	Shaker Heights High School	Shaker Heights, OH	0	160	0

A422. Solar System Ambassadors Training

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: OSS/Outreach[B7]

Description: During the training, Solar System Ambassadors are provided with online and hard copy materials. Training occurs by teleconference, with an archived transcript kept on a secure Web site for review later or by those Ambassadors unable to attend the training. Key to the success of this training is the involvement of mission scientists and engineers who interact with the Ambassadors. This interaction aids in inspiring the Ambassadors who then personalize their experience while engaging their audiences.

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Primary URL: <http://www.jpl.nasa.gov/ambassador/ambassadoronlysection/front.html>

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	Ms. Sandra Dawson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. David Doody	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Jim Erickson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Brian Ewenson	Lockheed Martin Corporation	Sunnyvale, CA
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	Mr. W. Michael Greene	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. James Hodder	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Randal Jackson	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Rhonda Jones	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Stephenie Lievens	NASA Jet Propulsion Laboratory	Pasadena, CA
	Ms. Leslie Lowes	NASA Jet Propulsion Laboratory	Pasadena, CA
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Dr. Sean Solomon,	Carnegie Institution of Washington	Washington, DC
Mr. Darrin Stephens	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Stephanie Stockman	NASA Goddard Space Flight Center	Greenbelt, MD
Dr. James Thieman	NASA Goddard Space Flight Center	Greenbelt, MD
Ms. Jenny Tieu	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Vince Voong	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Guy Webster	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Alice Wesson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Thomas West	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Shirley Wolff	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	50	0
02 Oct 02	02 Oct 02	NASA Jet Propulsion Laboratory	Pasadena, CA	0	48	0
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	0	1,000	0
28 Oct 02	31 Oct 02	4-H Agents Conference	Norfolk, VA	0	1,000	0
24 Jan 03	24 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	158	0
30 Jan 03	30 Jan 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	92	0
28 Feb 03	28 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	112	0
19 Mar 03	19 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	93	0
20 Mar 03	20 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	84	0
28 Mar 03	28 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	44	0
10 Apr 03	10 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	87	0
24 Apr 03	24 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	106	0
07 May 03	07 May 03	La Cañada High School	La Cañada, CA	21	0	0
14 May 03	14 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	21	0	0
18 Jun 03	18 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	78	0
25 Jun 03	25 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	85	0
06 Aug 03	06 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	73	0
28 Aug 03	28 Aug 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	75	0
08 Sep 03	08 Sep 03	La Cañada High School	La Cañada, CA	21	0	0
11 Sep 03	11 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	36	0
21 Sep 03	21 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	1,500	0
22 Sep 03	24 Sep 03	4-H Agents Conference	Salt Lake City, UT	0	750	0

A423. Solar System Community Events Program

Theme(s): ASO, SEC, SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12], Navigator[B27], NAI[B34], Cassini/Huygens Probe[B37], Mars E/PO[B40], Deep Impact[B51], Stardust[B56], Astromaterials Program[B57], DSMS[B59], Ulysses[B89], Voyager[B90]

Description: In this program, a set of kits is provided to a community organization, such as the Girl Scouts, to assist in the development of a science night in their community. The kits include information about all major NASA space science missions, as well as information about the planets and our solar system. Hands-on activities are also included. The Girl Scouts are working towards buying a kit for every council. This program will keep these kits current, and will also offer kits to other community-based organizations to buy or borrow, as their funds allow.

Lead: Ms. Sheri Klug, Arizona State University, Tempe, AZ 85287. E-mail: sklug@asu.edu. Phone: 480-727-6495.

Scientist(s): Ms. Sheri Klug Arizona State University Tempe, AZ

Partner(s): Girl Scouts of the USA National Headquarters New York, NY

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
04 Sep 03	04 Sep 03	Mid-Carolina High School	Prosperity, SC	315	0	0

23 Sep 03	23 Sep 03	Casa Grande Middle School	Casa Grande, AZ	1,000	0	0
27 Sep 03	27 Sep 03	Girl Scouts, Cactus-Pine Council	Phoenix, AZ	400	0	0

A424. Solar Terrestrial Probes Planetarium, Science Centers and Museum Outreach

Theme(s): SEC

Msn/Prgm: STP[B91]

Description: A STP/LWS sponsored retreat for parents and teachers from the Alexandria public schools. Parents, students and teachers participated in an exciting educational program entitled "Building a Presence for Science in the Community." Members of the school districts, private sector and the community participated in an exciting 2½ day retreat.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://stp.gsfc.nasa.gov>

2nd URL: <http://lws.gsfc.nasa.gov>

Scientist(s):	Ms. Sara Brown	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Charles Mercer	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Aug 03	10 Aug 03	Alexandria Public Schools District	Alexandria, VA	0	200	0

A425. Solar Terrestrial Probes: Classroom and Public Engagements

Theme(s): SEC

Msn/Prgm: STP[B91]

Description: The Sun-Earth Connection STP/LWS display provided educators and the general public with unique instructional tools and professional development teaching experiences linking national standards, benchmarks, and learning outcomes in multi-sector partnerships as only NASA can. NASA science materials were available for the public. The display also showcased images of Auroras for public awareness before NASA Sun-Earth Day.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

Primary URL: <http://lws.gsfc.nasa.gov>

2nd URL: <http://stp.gsfc.nasa.gov>

Scientist(s):	Ms. Chikia Barnes	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Sara Brown	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Eric Christian	NASA Office of Space Science	Washington, DC
	Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. DeLee Smith	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
08 Oct 02	19 Oct 02	World Space Congress	Houston, TX	0	3730	0
13 Feb 03	18 Feb 03	American Association for the Advancement of Science	Denver, CO	0	1450	0
24 Mar 03	29 Mar 03	Society for Information Technology and Teacher Education	Albuquerque, NM	0	1105	0
17 Sep 03	17 Sep 03	Hammond Elementary School	Laurel, MD	154	0	0

A426. Solstice Celebration

Theme(s): SEC

Msn/Prgm: S2N2 B/F[B21]

Description: The University of Wyoming's Art Museum annually celebrates the Summer Solstice in their rotunda, which was designed to show the sun in the center at exactly noon local time. This celebration included an activity with the University of Wyoming Planetarium's telescopes and staff, and Wyoming NASA Space Grant personnel to show and discuss current scientific knowledge of the sun and the summer solstice. NASA online resources were introduced to the public and materials listing them were distributed.

Lead: Dr. Kathleen Harper, Wyoming Space Grant Consortium, Laramie, WY 82071-3905. E-mail: KDug@uwyo.edu. Phone: 307-766-2862.

Primary URL: <http://uwadmnweb.uwyo.edu/artmuseum>

2nd URL: <http://wyomingspacegrant.uwyo.edu/planetarium.htm>

Partner(s): University of Wyoming

Laramie, WY

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
21 Jun 03	21 Jun 03	University of Wyoming	Laramie, WY	0	200	0

A427. Songs of the Aurora and Solar Wind at Family Adventures in Science

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: This presentation discussed plasma wave phenomena found on Earth and other planets and in the solar wind, using audio representation of many of the sounds and movies as a means of increasing the relevance of the phenomena beyond what the audience would get from a chart or graph.

Lead: Dr. William Kurth, University of Iowa, Iowa City, IA 52242. E-mail: william-kurth@uiowa.edu.

Primary URL: <http://www.physics.uiowa.edu/~umallik/adventure/adventure.htm>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Oct 02	19 Oct 02	University of Iowa	Iowa City, IA	0	50	0

A428. Sounds of Space-Science and Art

Theme(s): SEC

Msn/Prgm: Cluster II[B108]

Description: The University of Iowa has made a significant contribution to the public outreach for the Cluster II mission through the unique fusion of science and art into a form of music based on sounds obtained from space. Sun Rings, a chamber work in 10 movements, was written for the San Francisco-based Kronos Quartet. The Sun Rings concert is currently touring internationally following its kick off in Iowa City. One of the highlights is a presentation of quadraphonic sounds from space, obtained by the plasma wave receiver on the four Cluster spacecraft.

Lead: Dr. Ramona Kessel, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail:

Ramona.L.Kessel@nasa.gov. Phone: 301-286-6595.

Primary URL: <http://www-pw.physics.uiowa.edu/space-audio>

Partner(s): University of Iowa

Iowa City, IA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
26 Oct 02	19 Jul 03	University of Iowa	Iowa City, IA	0	4,000	0

A429. "Space Day" at San Jose Tech Museum of Innovation

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: NASA's Ames Research Center participated in San Jose Tech Museum's celebration of Space Day 2003.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail:

dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Primary URL: <http://www.thetech.org>

Scientist(s):	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA
	Mr. Allan Meye	Universities Space Research Association	Moffett Field, CA
	Ms. Leslie Proudfit	NASA Ames Research Center	Moffett Field, CA
	Mr. Eric Wang	Universities Space Research Association	Moffett Field, CA
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 May 03	03 May 03	Tech Museum of Innovation	San Jose, CA	0	3,000	0

A430. Space Place: International Technology Education Association Journal

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: ST-5[B116]

Description: The International Technology Education Association (ITEA) is a long-time Space Place partner. ITEA publishes a Space Place original, NASA-mission-related classroom activity article in each issue of its member journal, "The Technology Teacher." Each Space Place curriculum support activity is aligned with the ITEA Standards for Technology Literacy. Scientist Diane Fisher submits articles to "The Technology Teacher" eight times a year. Each article refers to a particular mission and is published under the Space Place header. Ms. Fisher presents complicated science concepts in simple terms that children can understand.

Contact: Ms. Liliana Novati, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Liliana.Novati@jpl.nasa.gov. Phone: 818-354-1486.

Primary URL: <http://spaceplace.jpl.nasa.gov>2nd URL: <http://www.iteawww.org>

Scientist(s): Ms. Diane Fisher NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Aug 03	30 Sep 03	International Technology Education Association	Reston, VA	0	8,000	0

A431. Space Place: Newspaper Articles

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: LISA[B70]

Description: Several large city daily newspapers (circulation totaling 2.5 million) publish a monthly children's Space Place column that we provide. Currently, 26 newspapers carry the column (7 in Spanish, 19 in English).

Contact: Ms. Liliana Novati, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Liliana.Novati@jpl.nasa.gov. Phone: 818-354-1486.

Primary URL: <http://spaceplace.nasa.gov>2nd URL: <http://spaceplace.jpl.nasa.gov>

Scientist(s): Ms. Diane Fisher NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Dec 02	25 Dec 02	Al Dia	Philadelphia, PA	0	25,000	0
25 Dec 02	25 Dec 02	Cape May County Herald	Rio Grande, NJ	0	5,000	0
25 Dec 02	25 Dec 02	Chronicle Telegram	Elyria, OH	0	125,000	0
25 Dec 02	25 Dec 02	Columbus Dispatch	Columbus, OH	0	247,000	0
25 Dec 02	25 Dec 02	Daily Courier	Kelowna, Canada	0	145,000	0
25 Dec 02	25 Dec 02	Daily Herald	Elgin, IL	0	144,000	0
25 Dec 02	25 Dec 02	Denver Post	Denver, CO	0	377,000	0
25 Dec 02	25 Dec 02	El Tiempo Latino	Arlington, VA	0	27,500	0
25 Dec 02	25 Dec 02	Fort Worth Star-Telegram	Fort Worth, TX	0	275,000	0
25 Dec 02	25 Dec 02	Hartford Courant Newspaper	Hartford, CT	0	208,000	0
25 Dec 02	25 Dec 02	Havre Daily News	Havre, MT	0	18,000	0
25 Dec 02	25 Dec 02	Herald-Standard	Uniontown, PA	0	9,000	0
25 Dec 02	25 Dec 02	La Noticia	Charlotte, NC	0	26,000	0
25 Dec 02	25 Dec 02	La Oferta	San Jose, CA	0	25,000	0
25 Dec 02	25 Dec 02	La Opinion	Los Angeles, CA	0	102,000	0
25 Dec 02	25 Dec 02	Los Angeles Times	Los Angeles, CA	0	1,100,000	0
25 Dec 02	25 Dec 02	Noticias del Mundo	Long Island City, NY	0	25,000	0
25 Dec 02	25 Dec 02	Sentinel	Seabrook, MD	0	200,000	0
25 Dec 02	25 Dec 02	South Bend Tribune	South Bend, IN	0	78,000	0
25 Dec 02	25 Dec 02	Stillwater News Press	Stillwater, OK	0	150,000	0
25 Dec 02	25 Dec 02	The News Times	Morehead City, NC	0	100,000	0
25 Dec 02	25 Dec 02	Times Record	Brunswick, ME	0	140,000	0
25 Dec 02	25 Dec 02	Vistazo	San Jose, CA	0	25,000	0

25 Dec 02	25 Dec 02	York Newspaper Company	York, PA	0	125,000	0
25 Dec 02	25 Dec 02	Youngstown Vindicator	Youngstown, OH	0	25,000	0

A432. Space Science Education at Public Events in New England

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: Public gatherings related to science and technology afford valuable opportunities for communicating the excitement of space science and the resources associated with the NASA E/PO support network. This sort of outreach is the equivalent of casting a shallow but very broad net. In the past year, NESSIE agents personally engaged thousands of teachers, students, parents, and children at events including the Connecticut Public Television Science Expo in Hartford, CT; Astronomy Day in Boston, MA; Air and Space Day in Tewksbury, MA; and Mars Opposition nights in Boston, Needham, and Rockport, MA.

Lead: Ms. Cathleen Clemens, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA 02138. E-mail: cclemens@mos.org. Phone: 617-589-0227.

Contact: Ms. Cathleen Clemens, Museum of Science, Boston, MA 02114-1099. E-mail: cclemens@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/nessie>

2nd URL: <http://spacemanning.net>

Scientist(s):	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Ms. Noreen Grice	Museum of Science	Boston, MA
	Dr. Raquel Morales	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Ms. Tania Ruiz	Museum of Science	Boston, MA
	Ms. Robin Symonds	Museum of Science	Boston, MA
	Dr. William Waller	Tufts University	Medford, MA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
22 Oct 02	22 Oct 02	Museum of Science	Boston, MA	0	500	0
03 Apr 03	06 Apr 03	Connecticut Public Television	Hartford, CT	0	22,000	0
10 May 03	10 May 03	Museum of Science	Boston, MA	0	1,600	0
21 Jun 03	21 Jun 03	SpaceManning.Net	Tewksbury, MA	0	2,000	0
27 Aug 03	27 Aug 03	Museum of Science	Boston, MA	0	5,000	0
27 Aug 03	27 Aug 03	Needham Public School System	Needham, MA	0	20	0
06 Sep 03	06 Sep 03	Halibut Point State Park	Rockport, MA	0	150	0

A433. Space Science for Amateur Astronomers

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: DePaul B/F[B15], SOFIA[B26], Navigator[B27]

Description: Amateur astronomers represent a huge, largely untapped resource of energy and enthusiasm for doing informal education and public outreach in astronomy and space science. Research conducted by the Astronomical Society of the Pacific (ASP) suggests that, of the roughly 50,000 astronomy club members and perhaps 100,000 "unaffiliated" amateur astronomers in the United States, at least 5,000 and possibly 10,000 currently participate in some form of public outreach, reaching a wide variety of audiences through many different venues. We are developing resources and opportunities for amateur astronomers in formal education in partnership with Walter Glogowski (Chicago Astronomical Society), Mike Bennett (ASP, SOFIA), and Barry Beaman (Astronomical League).

Lead: Dr. Bernhard Beck-Winchatz, DePaul University, Chicago, IL 60604. E-mail: bbeckwin@depaul.edu. Phone: 773-325-4545.

Primary URL: <http://www.chicagoastro.org>

2nd URL: <http://www.astroleague.org>

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Vivian Hoette	Yerkes Observatory	Williams Bay, WI
	Dr. James Sweitzer	DePaul University	Chicago, IL
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	Chicago Astronomical Society		Chicago, IL
	University of Chicago		Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Sep 03	20 Sep 03	Astrofest	Manteno, IL	149	0	0

A434. Space Science for Small Planetariums

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: Astronomical Search for Origins (ASO) Forum[B11], Solar System Exploration (SSE) Forum[B12], DePaul B/F[B15]

Description: The primary goal of this activity is to enhance space science education at small planetariums. Our main partner, the Great Lakes Planetarium Association, consists primarily of small planetariums, most of them located at schools. The largest part of their audience is, by far, K–12 students. These planetariums support K–12 science education with unique highly interactive programs and resources for millions of students. Events in this activity are designed to provide the community of small planetariums with professional development opportunities in space science, space science resources that are tailored to their needs, and support for the development of their own ideas in space science education.

Lead: Dr. Bernhard Beck-Winchatz, DePaul University, Chicago, IL 60604. E-mail: bbeckwin@depaul.edu. Phone: 773-325-4545.

Primary URL: <http://www.glpaweb.org>

Scientist(s):	Dr. Bernhard Beck-Winchatz	DePaul University	Chicago, IL
	Dr. James Sweitzer	DePaul University	Chicago, IL
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA
Partner(s):	Great Lakes Planetarium Association		Shaker Heights, OH

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
23 Oct 02	26 Oct 02	Great Lakes Planetarium Association Annual Conference	Fox Valley, WI	150	0	0
23 Oct 02	26 Oct 02	Great Lakes Planetarium Association Annual Conference	Fox Valley, WI	150	0	0
23 Oct 02	14 May 03	Great Lakes Planetarium Association	Shaker Heights, OH	50	0	0
24 Mar 03	24 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	24	0	0

A435. Space Science Network Northwest: Scientist Talks

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: A variety of talks on space science were given by Space Science Network Northwest (S2N2) staff, affiliates, and partners at venues throughout the northwest.

Lead: Dr. Julie Lutz, University of Washington, Seattle, WA 98195. E-mail: nasaerc@u.washington.edu. Phone: 206-543-0214.

Scientist(s):	Dr. Monica Kress	University of Washington	Seattle, WA
	Dr. Julie Lutz	University of Washington	Seattle, WA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
02 Nov 02	02 Nov 02	Expanding Your Horizons, South Puget Sound	Olympia, WA	410	0	0
01 Feb 03	01 Feb 03	Girls Exploring Math and Science Workshop	Seattle, WA	18	0	0
15 Feb 03	15 Feb 03	Black Data Processing Association, Seattle Chapter	Seattle, WA	75	0	0
20 Feb 03	20 Feb 03	Association for Women in Science, Seattle Chapter	Seattle, WA	30	0	0
02 Mar 03	02 Mar 03	Wyoming School Improvement Conference	Casper, WY	125	300	0
26 Apr 03	26 Apr 03	University of Hawaii at Manoa	Honolulu, HI	12	0	0
10 Jul 03	10 Jul 03	Seattle Mathematics Engineering Science Achievement	Seattle, WA	24	0	0
29 Sep 03	29 Sep 03	Wyoming School Improvement Conference	Casper, WY	125	300	0

28 Oct 03 28 Oct 03 Puget Sound Science Supervisors Education Leadership Conference
Blaine, WA 40 0 0

A436. Space Spot Shopping Mall Exhibit

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: The Space Spot Shopping Mall Exhibit is a traveling exhibit on astronomy and space science developed by the Pacific Science Center for use in shopping malls. The National Science Foundation provided funding for the project, and S2N2 assisted with exhibit development, materials, recruiting undergraduates to work at the exhibit, and evaluation. The exhibit was designed to be highly interactive. Each of the 17 kiosks includes something active to do or touch or guess or solve. The exhibit also includes an inflatable planetarium and information fliers with activities that can be done at home. Space Spot made 9-day visits in the summer of 2003 to three malls in western Washington. Evaluations showed that the Space Spot was well received by mall visitors and that many families who had never been to a science center or planetarium visited the exhibit. The exhibit will travel to malls throughout the state of Washington in 2004.

Lead: Ms. Marabeth Rogers, Pacific Science Center, Seattle, WA 98109. E-mail: marabeth_rogers@pacsci.org.
Phone: 206-443-3656.

Primary URL: <http://www.pacsci.org>

Partner(s): National Science Foundation

Arlington, VA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
19 Jul 03	27 Jul 03	Auburn Supermall	Auburn, WA	0	4,300	0
02 Aug 03	10 Aug 03	Everett Mall	Everett, WA	0	3,000	0
16 Aug 03	24 Aug 03	Cascade Mall	Burlington, WA	0	2,500	0

A437. Spitzer Space Telescope "Ask an Astronomer" Videos

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: The Spitzer Space Telescope E/PO team receives many questions from the public about infrared, as well as general astronomy. Many of these questions are answered in short "Ask an Astronomer" videos on the "CoolCosmos" Web site. These videos make use of animation and graphics, and allow the public to see a number of "real astronomers" talking about their work. While many of the videos address the topics of infrared astronomy and the Spitzer mission, others answer more general questions we get from the public, such what causes Moon phases or solar eclipses. One of our general interest video segments, hosted by Doris Daou and titled "Why does the Moon look like it changes?" won the Telly Award in 2003.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu.
Phone: 626-395-8670.

Contact: Ms. Doris Daou, California Institute of Technology, Pasadena, CA 91125.

Primary URL: http://coolcosmos.ipac.caltech.edu/cosmic_classroom/ask_astronomer/video/questions.shtml

2nd URL: <http://coolcosmos.ipac.caltech.edu>

A438. Spitzer Space Telescope Webcast: TV, and Radio Presentations

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: This section reports on media broadcast events in which Spitzer Space Telescope educational staff participated directly. It does not report on any media coverage that Spitzer Space Telescope received strictly from external sources.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu.
Phone: 626-395-8670.

Primary URL: <http://www.yac.org/yac>

Scientist(s): Dr. Michelle Thaller

California Institute of Technology

Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Mar 03	18 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	0
24 Apr 03	24 Apr 03	Young Astronauts	Spokane, WA	0	90,000	0

22 Aug 03	22 Aug 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	0	0
26 Aug 03	26 Aug 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	10,000	0

A439. Spitzer Space Telescope: Sponsored Publications

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: In this category, we report on articles in wide distribution that were written by Spitzer Space Telescope E/PO personnel, or were sponsored with Spitzer Space Telescope funding.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

Scientist(s):	Mr. John Keller	University of Arizona	Tucson, AZ
	Dr. Timothy Slater	University of Arizona	Tucson, AZ
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA
	Dr. William Waller	Tufts University	Medford, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Feb 03	01 Mar 03	California Institute of Technology	Pasadena, CA	0	100,000	0
28 Apr 03	28 Apr 03	Montana State University	Bozeman, MT	0	50	0

A440. Spitzer Space Telescope: "Ask an Astronomer" Helpdesk

Theme(s): ASO, SEU

Msn/Prgm: SST[B25]

Description: Spitzer Space Telescope's "Ask an Astronomer" helpdesk replies to thousands of questions sent to us by students, teachers, the general public, and the press. Questions are typically answered within 24 hours. The most frequently answered questions are posted on our "Ask an Astronomer" Web site.

Lead: Ms. Linda Hermans, California Institute of Technology, Pasadena, CA 91125. E-mail: lmh@ipac.caltech.edu. Phone: 805-499-0710.Primary URL: http://coolcosmos.ipac.caltech.edu/cosmic_classroom/ask_astronomer/faq

Scientist(s):	Ms. Linda Hermans	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	California Institute of Technology	Pasadena, CA	0	1,500	0

A441. Spitzer Space Telescope: Large Public Presentations

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: Spitzer Space Telescope staff participated in several large public presentations with audiences of 100 or more. Many events were Webcast, archived on the Web, or rebroadcast on television.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.Primary URL: <http://www.jpl.nasa.gov/events/lectures/apr01.html>

Scientist(s):	Mr. Charles Bluehawk	California Institute of Technology	Pasadena, CA
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Ms. Linda Hermans	California Institute of Technology	Pasadena, CA
	Dr. Robert Hurt	California Institute of Technology	Pasadena, CA
	Mr. James Keller	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Mar 03	10 Mar 03	California Institute of Technology	Pasadena, CA	30	0	0
18 Mar 03	18 Mar 03	California State Polytechnic University	Pomona, CA	70	0	0
29 Mar 03	29 Mar 03	Sally Ride Science Club	Pasadena, CA	620	50	0
17 May 03	18 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	30,000	0

20 May 03	20 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	90	0	0
12 Jun 03	12 Jun 03	NASA Jet Propulsion Laboratory	Pasadena, CA	200	0	0
13 Jun 03	13 Jun 03	Pasadena City College	Pasadena, CA	100	0	0
22 Jun 03	22 Jun 03	Valley College Astronomy Club	Valley Glen, CA	0	30	0
11 Jul 03	11 Jul 03	Orange County Astronomical Society	Orange County, CA	0	200	0
24 Aug 03	25 Aug 03	California Institute of Technology	Pasadena, CA	190	20	0
24 Aug 03	25 Aug 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	300	0
15 Sep 03	15 Sep 03	Los Angeles Valley College	Valley Glen, CA	92	0	0

A442. Spitzer Space Telescope: Public Exhibits

Theme(s): ASO, SEU

Msn/Prgm: SST[B25]

Description: Spitzer Space Telescope's E/PO group designed, produced, and maintained several public exhibits about the mission. These were presented at the venue listed.

Lead: Dr. Michelle Thaller, California Institute of Technology, Pasadena, CA 91125. E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

Scientist(s):	Mr. Charles Bluehawk	California Institute of Technology	Pasadena, CA
	Ms. Doris Daou	California Institute of Technology	Pasadena, CA
	Ms. Linda Hermans	California Institute of Technology	Pasadena, CA
	Mr. James Keller	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	Pasadena Public Library	Pasadena, CA	0	60,000	0

A443. Spitzer Space Telescope: Web Activities

Theme(s): ASO, SEU, SSE

Msn/Prgm: SST[B25]

Description: Spitzer Space Telescope's award-winning Web sites include detailed tutorials, experiments, activities, and videos on infrared and multiwavelength astronomy.

Lead: Ms. Linda Hermans, California Institute of Technology, Pasadena, CA 91125. E-mail: lmh@ipac.caltech.edu. Phone: 805-499-0710.

Primary URL: <http://sirtf.caltech.edu/EPO>

Scientist(s):	Ms. Linda Hermans	California Institute of Technology	Pasadena, CA
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	California Institute of Technology	Pasadena, CA	0	0	610,506
01 Oct 02	30 Sep 03	Whyville-Numedeon Inc.	Pasadena, CA	0	0	203,000

A444. Stardust Public Outreach

Theme(s): SSE

Msn/Prgm: Stardust[B56]

Description: A major challenge of the Stardust mission was to develop a plan to engage not just students but the American general public. Throughout the years, Stardust has invited numerous organizations, through educational and industrial partnerships, to come on a journey of a lifetime. In the true spirit of discovery, Stardust is a partnership of industry, university, and government participation. Additionally, Stardust E/PO has taken the concept of partnership to a higher level by partnering with national education organizations, activity seeking alliances with technology firms for technology transfer and development, and teaming with museums and other experts in the area of public outreach.

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

Primary URL: <http://stardust.jpl.nasa.gov>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
		NASA Ames Research Center	Moffett Field, CA	0	0	0
17 Feb 03	17 Feb 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	39	0
29 Mar 03	30 Mar 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	11,000	0
23 Apr 03	23 Apr 03	NASA Ames Research Center	Moffett Field, CA	0	800	0
24 Apr 03	24 Apr 03	NASA Jet Propulsion Laboratory	Pasadena, CA	250	250	0
08 May 03	09 May 03	NASA Kennedy Space Center	Kennedy Space Center, FL	0	1,000	0
18 May 03	19 May 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	30,000	0
23 Jul 03	23 Jul 03	The Space Advisory Committee	Australia, Australia	0	0	0

A445. Stardust Target Groups

Theme(s): SSE

Msn/Prgm: Stardust[B56]

Description: The Stardust mission E/PO targets museums, planetariums, and science centers to develop space science exhibits, educational activities, and training programs. The scope of this initiative also includes partnerships with the Challenger Center, Space Place, Ambassadors, and Solar System Educators. Additional information is available from specific Stardust-affiliated venues and partners.

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

Contact: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
10 Feb 03	14 Feb 03	NASA's Academy for Sharing Knowledge	Houston, TX	33	0	0
01 Jul 03	01 Jul 03	Chabot Space and Science Center	Oakland, CA	100	0	0
14 Jul 03	18 Jul 03	Liftoff Summer Institute	Houston, TX	38	0	0

A446. Sun Rings

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: The multimedia production of Sun Rings is based on sounds of space collected by Dr. Gurnett over a 40-year period.

Lead: Dr. Donald Gurnett, University of Iowa, Iowa City, IA 52242. E-mail: donald-gurnett@uiowa.edu. Phone: 319-335-1697.

Primary URL: <http://www-pw.physics.uiowa.edu/space-audio>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
26 Oct 02	26 Oct 02	University of Iowa	Iowa City, IA	0	1,500	0
23 Jan 03	23 Jan 03	University of Houston	Houston, TX	0	200	0
22 Mar 03	22 Mar 03	Barbican Centre	London, United Kingdom	0	600	0

A447. Sun Rings: A Pre-Performance Presentation

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: Dr. Gurnett gave talks before the multimedia production of Sun Rings, based on sounds of space collected by Dr. Gurnett over a 40-year period.

Lead: Dr. Donald Gurnett, University of Iowa, Iowa City, IA 52242. E-mail: donald-gurnett@uiowa.edu. Phone: 319-335-1697.

Primary URL: <http://www-pw.physics.uiowa.edu/space-audio>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
24 Oct 02	24 Oct 02	University of Iowa	Iowa City, IA	0	125	0

26 Oct 02	26 Oct 02	University of Iowa	Iowa City, IA	0	60	0
22 Jan 03	22 Jan 03	University of Houston	Houston, TX	0	200	0
22 Mar 03	22 Mar 03	Barbican Centre	London, United Kingdom	0	600	0

A448. Sun-Earth Connection: Online Newsletter

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14]

Description: "The Sun-Earth Connection" is an online E/PO newsletter for the Sun-Earth connection science community and others who are interested in this space science theme. The newsletter is issued approximately every 6 weeks. The goal is to keep the SEC Forum community informed about the latest events and activities for educators and the public and to provide a chance to contribute notices about accomplishments in the realm of education and public outreach.

Lead: Ms. Karin Hauck, University of California, Berkeley, Berkeley, CA 94720. E-mail: karin@ssl.berkeley.edu. Phone: 510-642-2343.

Primary URL: <http://sunearth.ssl.berkeley.edu/SECNews>

Scientist(s):	Mr. Troy Cline	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Karin Hauck	University of California, Berkeley	Berkeley, CA
	Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
	Ms. Elaine Lewis	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Carolyn Ng	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
30 Sep 02	30 Sep 03	University of California, Berkeley	Berkeley, CA	0	325	0

A449. Sun-Earth Day

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], Voyager[B90], STP[B91], Solar-B[B95], TIMED[B97], ACE[B98], IMAGE[B100], RHESSI[B102], Polar[B110], Wind[B111], SOHO[B112], LWS[B114]

Description: The Sun-Earth Connection Education Forum (SECEF), a partnership between NASA Goddard Space Flight Center and the University of California at Berkeley, created and coordinates Sun-Earth Day as an annual national event. Through this annual event, opportunities are provided to share the science of the Sun with educators, students, and the general public. Webcast technology is used to bring the science into the classroom and to the general public in real time. Support materials are available through the NASA Central Operation of Resources for Educators (CORE), NASA Centers, and NASA Educator Resource Centers (ERC). The theme is newly created each year, as are the featured activities. Activities include telescopes on the Web, Webcasts, Web chats, teacher training workshops, museum activities, and sharing data through the featured activities. Scientists are involved through classroom and museum presentations, answering questions during the Webcast and Web chats.

Lead: Ms. Elaine Lewis, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: lewis@mail630.gsfc.nasa.gov. Phone: 301-286-3337.

Contact: Ms. Troy Cline, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: cline@mail630.gsfc.nasa.gov. Phone: 301-286-6606.

Primary URL: <http://sunearth.gsfc.nasa.gov/sunearthday>

Scientist(s):	Ms. Andrea Angrum	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Gibor Basri	University of California, Berkeley	Berkeley, CA
	Dr. Pal Brekke	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Gilbert Clark	NASA Jet Propulsion Laboratory	Pasadena, CA
	Dr. Nahide Craig	University of California, Berkeley	Berkeley, CA
	Dr. Nicola Fox	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Isabel Hawkins	University of California, Berkeley	Berkeley, CA
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Ronald Lepping	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Carol Lunsford	University of California, Berkeley	Berkeley, CA
	Dr. Bryan Mendez	University of California, Berkeley	Berkeley, CA
	Dr. Sten Odenwald	NASA Goddard Space Flight Center	Greenbelt, MD

	Ms. Ruth Paglierani	University of California, Berkeley	Berkeley, CA
	Ms. Darlene Park	University of California, Berkeley	Berkeley, CA
	Dr. Laura Peticolas	University of California, Berkeley	Berkeley, CA
	Dr. Art Poland	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Jeffrey Rosendhal	NASA Office of Space Science	Washington, DC
	Mr. Igor Ruderman	University of California, Berkeley	Berkeley, CA
	Dr. Greg Schultz	University of California, Berkeley	Berkeley, CA
	Dr. Richard Vondrak	NASA Goddard Space Flight Center	Greenbelt, MD
Partner(s):	Chabot Space and Science Center		Oakland, CA
	Fernbank Science Center		Atlanta, GA
	Geoff Haines-Stiles Productions, Inc.		Morristown, NJ
	Imaginarium Science Discovery Center		Anchorage, AK
	Maryland Science Center		Baltimore, MD
	NASA Office of Education		Washington, DC

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Nov 02	30 Mar 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	125,000	0
01 Nov 02	01 May 03	NASA Goddard Space Flight Center	Greenbelt, MD	52,549	0	0
04 Nov 02	10 Sep 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	17,793	0
11 Feb 03	17 Mar 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	35,016,350	0
22 Feb 03	23 Feb 03	Fernbank Science Center	Atlanta, GA	10	0	0
22 Feb 03	23 Feb 03	Imaginarium Science Discovery Center	Anchorage, AK	53	0	0
28 Feb 03	01 Mar 03	Chabot Space and Science Center	Oakland, CA	29	0	0
28 Feb 03	01 Mar 03	Maryland Science Center	Baltimore, MD	207	0	0
04 Mar 03	18 Mar 03	Eliot Middle School	Altadena, CA	122	0	0
16 Mar 03	18 Mar 03	NASA Goddard Space Flight Center	Greenbelt, MD	103	0	0
17 Mar 03	21 Mar 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	105,935	0
22 Mar 03	22 Mar 03	Chabot Space and Science Center	Oakland, CA	0	800	0
10 Apr 03	10 Sep 03	NASA Langley Research Center	Hampton, VA	0	3260,000	0

A450. "Sunspotting: Tracking the Wild Sunspot"

Theme(s): SEC

Msn/Prgm: Solar-B[B95]

Description: "Sunspotting: Tracking the Wild Sunspot" brings public and student visitors face to face with the Sun through the use of Learning Technologies, Inc., "Sunspotter" solar telescopes and other solar viewing instruments. As part of the demonstration, visitors are shown with a large lens and a surrogate "eyeball" (a piece of wood or a grape) why it is not safe to look at the Sun, either directly or with an instrument like a conventional telescope. The differences and similarities in the design of the Sunspotter versus a conventional refractor invoke discussions on telescope technology, and the solar image motion across the viewing surface brings up the question of apparent solar motion and the rotation of Earth on its axis. Visitors are given an informational brochure that introduces our Sun and its importance to life on Earth as well as providing fascinating solar facts, Web sites, a solar crossword puzzle, and an explanation of the sunspot features seen through the Sunspotters. The unseen solar magnetic fields that cause the sunspots are modeled with a visual aid, and visitors are given the opportunity to trace their own map of the current sunspot activity on the Sun.

Lead: Mr. Benjamin Burress, Chabot Space and Science Center, Oakland, CA 94619. E-mail: bburress@chabot-space.org. Phone: 510-336-7308.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
29 Mar 03	29 Mar 03	Chabot Space and Science Center	Oakland, CA	0	55	0
19 Apr 03	19 Apr 03	Chabot Space and Science Center	Oakland, CA	0	7	0
22 Apr 03	22 Apr 03	Chabot Space and Science Center	Oakland, CA	0	11	0
10 May 03	10 May 03	Chabot Space and Science Center	Oakland, CA	0	50	0
22 Jun 03	22 Jun 03	Chabot Space and Science Center	Oakland, CA	0	52	0
10 Jul 03	10 Jul 03	Chabot Space and Science Center	Oakland, CA	0	12	0
18 Jul 03	18 Jul 03	Chabot Space and Science Center	Oakland, CA	0	12	0

26 Jul 03	26 Jul 03	Chabot Space and Science Center	Oakland, CA	0	15	0
07 Aug 03	07 Aug 03	Chabot Space and Science Center	Oakland, CA	0	61	0
10 Aug 03	10 Aug 03	Chabot Space and Science Center	Oakland, CA	0	48	0
23 Aug 03	23 Aug 03	Chabot Space and Science Center	Oakland, CA	0	54	0

A451. Swift Gamma Ray Burst Mission: Public Presentations

Theme(s): SEU
Msn/Prgm: Swift Gamma Ray Burst Mission[B78]
Description: Swift Gamma Ray Burst mission scientists, Educator Ambassadors and E/PO professionals do presentations for the public highlighting the scientific goals of the Swift mission, and explaining the instruments on board the satellite. Gamma-ray bursts, black holes, and distant galaxies are common themes in these presentations.
Lead: Dr. Lynn Cominsky, Sonoma State University, Rohnert Park, CA 94928. E-mail: lynn@charmian.sonoma.edu. Phone: 707-664-2655.

Primary URL: <http://swift.sonoma.edu>

2nd URL: <http://swift.sonoma.edu/program.html>

Scientist(s):	Dr. Lynn Cominsky	Sonoma State University	Rohnert Park, CA
	Dr. Neil Gehrels	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Tim Graves	Sonoma State University	Rohnert Park, CA
	Dr. Hans Krimm	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Philip Plait	Sonoma State University	Rohnert Park, CA
	Ms. Sarah Silva	Sonoma State University	Rohnert Park, CA
	Dr. Monica Sperandio	Brera Astronomical Observatory	Milano Italy

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Sep 02	27 Sep 02	Hampden-Sydney College	Hampden-Sydney, VA	50	40	0
02 Oct 02	02 Oct 02	University of Maryland	College Park, MD	50	0	0
10 Jan 03	10 Jan 03	Holton Rotary Club	Holton, KS	24	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference	Philadelphia, PA	0	120	0
05 Apr 03	08 Apr 03	American Physical Society Annual Meeting	Philadelphia, PA	0	100	0
19 Apr 03	19 Apr 03	Hampden-Sydney College	Hampden-Sydney, VA	75	5	0
29 Apr 03	29 Apr 03	Pennsylvania State University	University Park, PA	75	0	0
02 May 03	03 May 03	North Central Region of the Astronomical League	Sturgeon Bay, WI	8	55	0
19 May 03	25 May 03	American Astronomical Society Meeting	Nashville, TN	0	500	0
07 Jul 03	07 Jul 03	Italian Space Agency	Rome, Italy	5	0	0
10 Sep 03	10 Sep 03	Gamma Ray Burst Conference	Santa Fe, NM	0	200	0
12 Sep 03	12 Sep 03	Ryerson Nature Center	Deerfield, IL	2	29	0
20 Sep 03	20 Sep 03	Discovery Center of Idaho	Boise, ID	0	30	0

A452. The Night Sky Network: Engaging Amateur Astronomy Clubs

Theme(s): ASO
Msn/Prgm: Navigator[B27], KECK[B28], SIM[B31], TPF[B32]
Description: Working with the Astronomical Society of the Pacific (ASP), Navigator is creating a national Night Sky Network, linking hundreds of amateur astronomy clubs around the country through fun and educational demonstration activities (a PlanetQuest Kit), a dedicated Web site, training, compelling visuals, and newsletters. These amateur clubs will have an estimated reach of 100,000 to 200,000 people per year.
Contact: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.

Primary URL: <http://planetquest.jpl.nasa.gov>

2nd URL: <http://dmdevel.jpl.nasa.gov/nightsky/index.cfm>

Scientist(s):	Ms. Marni Berendsen	Astronomical Society of the Pacific	San Francisco, CA
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Apr 03	12 Apr 03	Rockford Amateur Astronomers	Rockford, IL	0	46	0
22 Apr 03	22 Apr 03	Rockford Amateur Astronomers	Rockford, IL	0	39	0
29 Apr 03	29 Apr 03	The Albuquerque Astronomical Society	Albuquerque, NM	0	810	0
01 May 03	01 May 03	San Jose Astronomical Association	San Jose, CA	0	82	0
03 May 03	03 May 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	126	0
10 May 03	10 May 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	2,100	0
23 May 03	23 May 03	Austin Astronomical Society	Austin, TX	0	7	0
23 May 03	23 May 03	San Jose Astronomical Association	San Jose, CA	0	37	0
24 May 03	24 May 03	Rockford Amateur Astronomers	Rockford, IL	0	103	0
25 May 03	25 May 03	The Albuquerque Astronomical Society	Albuquerque, NM	0	150	0
26 May 03	26 May 03	The Albuquerque Astronomical Society	Albuquerque, NM	0	206	0
28 May 03	28 May 03	The Albuquerque Astronomical Society	Albuquerque, NM	0	220	0
31 May 03	31 May 03	Austin Astronomical Society	Austin, TX	0	11	0
03 Jun 03	03 Jun 03	San Jose Astronomical Association	San Jose, CA	0	80	0
03 Jun 03	03 Jun 03	Tucson Amateur Astronomy Association	Tucson, AZ	0	25	0
06 Jun 03	06 Jun 03	Tucson Amateur Astronomy Association	Tucson, AZ	0	102	0
07 Jun 03	07 Jun 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	32	0
12 Jun 03	12 Jun 03	Barnard-Seyfert Astronomical Society of Nashville	Nashville, TN	0	45	0
24 Jun 03	24 Jun 03	Tucson Amateur Astronomy Association	Tucson, AZ	0	234	0
05 Jul 03	05 Jul 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	74	0
08 Jul 03	12 Jul 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	190	0
17 Jul 03	17 Jul 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	110	0
24 Jul 03	24 Jul 03	Des Moines Astronomical Society	Des Moines, IA	0	17	0
14 Aug 03	14 Aug 03	Eugene Astronomical Society	Eugene, OR	0	135	0
14 Aug 03	14 Aug 03	Eugene Astronomical Society	Eugene, OR	0	180	0
15 Aug 03	15 Aug 03	San Jose Astronomical Association	San Jose, CA	0	137	0
16 Aug 03	16 Aug 03	Eugene Astronomical Society	Eugene, OR	0	145	0
20 Aug 03	20 Aug 03	Tacoma Astronomical Society	Tacoma, WA	0	16	0
22 Aug 03	22 Aug 03	Eugene Astronomical Society	Eugene, OR	0	1,000	0
27 Aug 03	27 Aug 03	Eugene Astronomical Society	Eugene, OR	0	1,000	0
30 Aug 03	30 Aug 03	Tacoma Astronomical Society	Tacoma, WA	0	200	0
02 Sep 03	02 Sep 03	Tacoma Astronomical Society	Tacoma, WA	0	100	0
05 Sep 03	05 Sep 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	14	0
16 Sep 03	16 Sep 03	Eugene Astronomical Society	Eugene, OR	0	1,000	0
20 Sep 03	20 Sep 03	Mt. Diablo Observatory Association, Inc.	Walnut Creek, CA	0	83	0
23 Sep 03	23 Sep 03	Eastside Astronomical Society	Bellevue, WA	0	15	0

A453. "The Space Place" Web Site

Theme(s): SEC, SEU, SSE

Msn/Prgm: ST-5[B116]

Description: Available in both English and Spanish, "The Space Place" Web site targets elementary school-aged children and their teachers and parents. The continuously evolving creation of a team of writers, illustrators, and software developers, it now includes over 75 separate activity and fun fact modules.

Contact: Ms. Liliana Novati, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Liliana.Novati@jpl.nasa.gov. Phone: 818-354-1486.

Primary URL: <http://spaceplace.jpl.nasa.gov>2nd URL: <http://spaceplace.nasa.gov>

Scientist(s): Ms. Diane Fisher NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Oct 02	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	186,000
01 Feb 03	30 Sep 03	NASA Jet Propulsion Laboratory	Pasadena, CA	0	0	308,000

A454. TIMED Public Outreach

Theme(s): SEC
 Msn/Prgm: TIMED[B97]
 Description: The outreach program involved a paper airplane contest, written reports, oral interviews, design assessment, and a flight test. The audience included contestants, teachers, mentors, family, and friends.
 Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.
 Contact: Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.
 Primary URL: <http://www.timed.jhuapl.edu>
 Scientist(s): Ms. Terry Betenbaugh Johns Hopkins Applied Physics Laboratory Laurel, MD
 Mr. Thomas Milnes Johns Hopkins Applied Physics Laboratory Laurel, MD

Event(s):

Dates		Location	Participants			
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
11 Nov 02	11 Nov 02	Private Residence	Baltimore, MD	0	18	0
15 Mar 03	15 Mar 03	Baltimore Museum of Industry	Baltimore, MD	0	950	0

A455. "To Mars with MER"

Theme(s): SSE
 Msn/Prgm: Adler Center for Space Science Education[B5], Challenger Center for Space Science Education[B6], OSS/Outreach[B7], P2K[B9], Solar System Exploration (SSE) Forum[B12], DePaul B/F[B15], LPI B/F[B16], MARSSB[B17], NESSIE B/F[B18], SSI B/F[B20], Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead:[B39], Mars E/PO[B40], 2001 Mars Odyssey[B41], MER[B42], MGS[B43], Mars Pathfinder[B44], MRO[B45], MSL[B46], Viking[B47], Mars Express[B63]
 Description: "To Mars with MER" (TMwM) uses the science, engineering and human stories of MER to excite youngsters across America about the exploration of the solar system and inform them about Earth-Mars comparisons and high-tech careers. Supported by a major grant from the National Science Foundation Informal Science Education program, as well as OSS, TMwM includes multi-media and targeted outreach activities. Beginning in spring 2003 and concluding in summer 2004, the project offers three live and interactive broadcasts for schools and science centers, three primetime documentaries for general audiences, a Web site supporting the programs, hands-on activities developed by Passport to Knowledge (P2K)and others, and outreach both to inner city youngsters and those in rural communities. P2K is partnering with the NASA Space Science Center at DePaul University in Chicago and NASA's Urban Initiative for media and community events in Houston, St. Louis, New York, Washington, DC, Denver, and Los Angeles. Working with the Space Science Institute, Boulder, P2K is supporting outreach events relating to the Space Science Institute's traveling Mars exhibits at planetarium conferences, and rural sites. In 2003, "Countdown to Mars", hosted by Bill Nye the Science Guy, aired live from DePaul on SpaceDay 2003, featuring MER scientists and engineers on site and interacting live via satellite from NASA's Jet Propulsion Laboratory. Bouncing to Mars, the first primetime documentary, aired on many PBS stations and NASA-TV in August 2003, around the time when Mars was closer to Earth than at any time in the last 60,000 years. As can be seen on the TMwM Web site, especially in the RESEARCH/ers section, TMwM's emphasis is on the diverse team of people who have brought the robots to life. Comments from youngsters participating at DePaul show TMwM is succeeding: "Every person who helped MER get this far should be proud of themselves", "I would like to join the NASA group so much." The rovers land in January 2004, and the TMwM journey continues. Listed below are television stations that broadcast the programs and schools districts that participated in TMwM events.
 Lead: Mr. Geoffrey Haines-Stiles, Geoff Haines-Stiles Productions, Inc., Morristown, NJ 07960. E-mail: ghs@passporttoknowledge.com. Phone: 973-656-9403.
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 Mr. Don Banfield Cornell University Ithaca, NY
 Dr. Deborah Bass NASA Jet Propulsion Laboratory Pasadena, CA
 Mr. John Beck NASA Jet Propulsion Laboratory Pasadena, CA
 Ms. Diane Bollen Cornell University Ithaca, NY

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Dr. Natalie Cabrol	SETI Institute	Mountain View, CA
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Mr. John Carson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Steve Collins	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Jessica Collisson	NASA Jet Propulsion Laboratory	Pasadena, CA
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Ms. Nagin Cox	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Joy Crisp	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Jim Erickson	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Orlando Figueroa	NASA Office of Space Science	Washington, DC
Dr. Jim Garvin	NASA Office of Space Science	Washington, DC
Mr. Tim Glotch	Arizona State University	Tempe, AZ
Dr. Matthew Golombek	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steven Gorevan	Honeybee Robotics, Ltd.	New York, NY
Mr. Trevor Graff	Arizona State University	Tempe, AZ
Dr. John Grant	Smithsonian National Museum of Natural History	Washington, DC
Mr. Jose Guzman	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Geoffrey Haines-Stiles	Geoff Haines-Stiles Productions, Inc.	Morristown, NJ
Mr. David Herman	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Scott Hulme	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Jackie Johnson	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Sheri Klug	Arizona State University	Tempe, AZ
Ms. Amy Knudson	Arizona State University	Tempe, AZ
Dr. Wayne Lee	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Stephenie Lievense	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Randell Lindemann	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Mark Maimone	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Rob Manning	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Laura Mehall	Arizona State University	Tempe, AZ
Dr. Tom Myrick	Honeybee Robotics, Ltd.	New York, NY
Mr. Tom Myrick	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Bill Nye	Cornell University	Ithaca, NY
Dr. Timothy Parker	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Ramiro Perez	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Mark Powell	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jim Rice	Arizona State University	Tempe, AZ
Mr. Tommaso Rivellini	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Steve Ruff	Arizona State University	Tempe, AZ
Mr. Miguel San Martin	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Colleen Sharkey	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Pam Smith	Cornell University	Ithaca, NY
Dr. Steve Squyres	Cornell University	Ithaca, NY
Mr. Adam Steltzner	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. James Sweitzer	DePaul University	Chicago, IL
Mr. Pete Theisinger	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Arthur Thompson	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Jennifer Trosper	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Eddie Tunstel	NASA Jet Propulsion Laboratory	Pasadena, CA
Ms. Paige Valderrama	Arizona State University	Tempe, AZ
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	Pasadena, CA
Mr. Christopher Voorhees	NASA Jet Propulsion Laboratory	Pasadena, CA
Dr. Edward Weiler	NASA Office of Space Science	Washington, DC
Partner(s): Adler Planetarium and Astronomy Museum		Chicago, IL
American Museum of Natural History		New York, NY
Arizona State University		Tempe, AZ
Ball Aerospace Technologies Corporation		Boulder, CO

Boonshoft Museum of Discovery
 Brownsville Independent School District,
 California Institute of Technology
 Space and Science Center
 Clark Planetarium
 CUNY City College of New York
 Denver Museum of Nature and Science
 DePaul University
 Flandrau Science Center
 Franklin Institute Science Museum
 Hanson Planetarium
 Houston Museum of Natural Science
 Imaginarium Science Discovery Center,
 Liberty Science Center,
 Lockheed Martin Space Systems
 Marine Biological Laboratory, Woods
 Maryland Science Center
 Muncie School District
 NASA Ames Research Center
 NASA Glenn Research Center
 NASA Goddard Space Flight Center
 NASA Jet Propulsion Laboratory
 NASA Johnson Space Center
 NASA Kennedy Space Center

NASA Langley Research Center
 NASA Office of Earth Science
 NASA Office of Public Affairs
 NASA Office of Space Flight
 NASA Office of Space Science
 National Center for Atmospheric Research
 National Oceanic and Atmospheric Administration
 National Science Foundation
 Peggy Notebaert Nature Museum
 Rocky Mount Children's Museum
 Space Foundation
 Space Science Institute
 Space Telescope Science Institute
 St. Louis Science Center
 The Boeing Company

U.S. Naval Observatory
 University Corporation for Atmospheric Research
 Woods Hole Oceanographic Institute

Dayton, OH
 Brownsville, TX
 Pasadena, CA Chabot
 Oakland, CA
 Salt Lake City, UT
 New York, NY
 Denver, CO
 Chicago, IL
 Tucson, AZ
 Philadelphia, PA
 Salt Lake City, UT
 Houston, TX
 Anchorage, AK
 Jersey City, NJ
 Littleton, CO
 Hole, MA
 Baltimore, MD
 Muncie, IN
 Moffett Field, CA
 Cleveland, OH
 Greenbelt, MD
 Pasadena, CA
 Houston, TX
 Kennedy Space Center,
 FL
 Hampton, VA
 Washington, DC
 Washington, DC
 Washington, DC
 Washington, DC
 Boulder, CO
 Boulder, CO
 Arlington, VA
 Chicago, IL
 Rocky Mount, NC
 Colorado Springs, CO
 Boulder, CO
 Baltimore, MD
 St. Louis, MO
 Cape Canaveral Air
 Station, FL
 Washington, DC
 Boulder, CO
 Woods Hole, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 May 03	01 May 03	Public Broadcasting Service	Alexandria, VA	0	13,190,000	350,000
01 May 03	30 Sep 03	Arizona Educational Television	Tempe, AZ	0	0	0
01 May 03	30 Sep 03	Atlanta Public Schools	Atlanta, GA	0	0	0
01 May 03	30 Sep 03	Bay District Schools	Panama City, FL	0	0	0
01 May 03	30 Sep 03	Board of Cooperative Educational Services	West Seneca, NY	0	0	0
01 May 03	30 Sep 03	Cable News Channel 8	Springfield, VA	0	0	0
01 May 03	30 Sep 03	Catholic Television Network	Oakland, CA	0	0	0
01 May 03	30 Sep 03	Chillicothe High School	Chillicothe, MO	0	0	0
01 May 03	30 Sep 03	Coldwater Community Schools	Coldwater, MI	0	0	0
01 May 03	30 Sep 03	Colorado Springs School District	Colorado Springs, CO	0	0	0

01 May 03	30 Sep 03	Connecticut Public Television	Hartford, CT	0	0	0
01 May 03	30 Sep 03	Fairfax County Public Schools	Falls Church, VA	0	0	0
01 May 03	30 Sep 03	Fort Lauderdale School District	Fort Lauderdale, FL	0	0	0
01 May 03	30 Sep 03	Georgia Public Broadcasting	Atlanta, GA	0	0	0
01 May 03	30 Sep 03	Governor's School	Danville, VA	0	0	0
01 May 03	30 Sep 03	Gratiot-Isabella Regional Education Service District				
			Ithaca, MI	0	0	0
01 May 03	30 Sep 03	Gwinett County Public Schools	Lawrenceville, GA	0	0	0
01 May 03	30 Sep 03	Huntsville City Schools	Huntsville, AL	0	0	0
01 May 03	30 Sep 03	Idaho Public Television	Boise, ID	0	0	0
01 May 03	30 Sep 03	John B. Connally Middle School	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KAET-TV, Channel 8/Phoenix	Tempe, AZ	0	0	0
01 May 03	30 Sep 03	KAFT-TV, Channel 13/Fayetteville	Conway, AR	0	0	0
01 May 03	30 Sep 03	KAFT-TV, Channel 13/Fayetteville	Conway, AR	0	0	0
01 May 03	30 Sep 03	KAKM-TV, Channel 7/Anchorage	Anchorage, AK	0	0	0
01 May 03	30 Sep 03	KBIN-TV, Channel 32/Council Bluffs	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KBIN-TV, Channel 32/Council Bluffs	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KCPT-TV, Channel 19/ Kansas City	Kansas City, MO	0	0	0
01 May 03	30 Sep 03	KCPT-TV, Channel 19/ Kansas City	Kansas City, MO	0	0	0
01 May 03	30 Sep 03	KCSM-TV, Channel 60/San Mateo	San Mateo, CA	0	0	0
01 May 03	30 Sep 03	KCTS Public Television, Channel 9/Seattle	Seattle, WA	0	0	0
01 May 03	30 Sep 03	KDIN-TV, Channel 11/Des Moines	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KDIN-TV, Channel 11/Des Moines	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KDTN-TV, Channel 2/Dallas	Dallas, TX	0	0	0
01 May 03	30 Sep 03	KEDT-TV, Channel 16/Corpus Christi	Corpus Christi, TX	0	0	0
01 May 03	30 Sep 03	KEET-TV, Channel 13/Eureka	Eureka, CA	0	0	0
01 May 03	30 Sep 03	KEET-TV, Channel 13/Eureka	Eureka, CA	0	1,440,000	125,000
01 May 03	30 Sep 03	KEMV-TV, Channel 6/Mountain View	Conway, AR	0	0	0
01 May 03	30 Sep 03	Kentucky Authority for Educational TV	Lexington, KY	0	0	0
01 May 03	30 Sep 03	KERA-TV, Channel 13/Dallas, Fort Worth				
		Denton	Dallas, TX	0	0	0
01 May 03	30 Sep 03	KERA-TV, Channel 13/Dallas, Fort Worth				
		Denton	Dallas, TX	0	0	0
01 May 03	30 Sep 03	KETA-TV, Channel 13/Oklahoma City	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KETA-TV, Channel 13/Oklahoma City	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KETC-TV, Channel 9/ St. Louis	St. Louis, MO	0	0	0
01 May 03	30 Sep 03	KETC-TV, Channel 9/ St. Louis	St. Louis, MO	0	11,750,000	225,000
01 May 03	30 Sep 03	KETG-TV, Channel 9/Arkadelphia	Conway, AR	0	0	0
01 May 03	30 Sep 03	KETG-TV, Channel 9/Arkadelphia	Conway, AR	0	0	0
01 May 03	30 Sep 03	KETJ-TV, Channel 19/Jonesville	Conway, AR	0	0	0
01 May 03	30 Sep 03	KETJ-TV, Channel 19/Jonesville	Conway, AR	0	0	0
01 May 03	30 Sep 03	KETS-TV, Channel 2/Little Rock	Conway, AR	0	0	0
01 May 03	30 Sep 03	KETS-TV, Channel 2/Little Rock	Conway, AR	0	0	0
01 May 03	30 Sep 03	KHIN-TV, Channel 36/Red Oak	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KHIN-TV, Channel 36/Red Oak	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KIIN-TV, Channel 12/Iowa City	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KIIN-TV, Channel 12/Iowa City	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KIMT-TV, Channel 3	Mason City, IA	0	0	0
01 May 03	30 Sep 03	KLCS-TV, Channel 58/Los Angeles	Los Angeles, CA	0	0	0
01 May 03	30 Sep 03	KLCS-TV, Channel 58/Los Angeles	Los Angeles, CA	0	0	0
01 May 03	30 Sep 03	KLPA-TV, Channel 25/Alexandria	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLPA-TV, Channel 25/Alexandria	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLPB-TV, Channel 24/Lafayette	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLPB-TV, Channel 24/Lafayette	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLRN, Alama Public Telecommunications	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KLRN, Alama Public Telecommunications	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KLRU-TV, Channel 18/Austin	San Antonio, TX	0	0	0

01 May 03	30 Sep 03	KLRU-TV, Channel 18/Austin	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KLRU-TV, Channel 18/Austin	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KLRU-TV, Channel 18/Austin	San Antonio, TX	0	0	0
01 May 03	30 Sep 03	KLTL-TV, Channel 18/Lake Charles	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLTL-TV, Channel 18/Lake Charles	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLTM-TV, Channel 13/Monroe	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLTM-TV, Channel 13/Monroe	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLTS-TV, Chanel 24/Shreveport	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLTS-TV, Chanel 24/Shreveport	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	KLVX-TV, Channel 10/Las Vegas	Las Vegas, NV	0	0	0
01 May 03	30 Sep 03	KMOS-TV, Channel 6/Sedalia	Warrensburg, MO	0	0	0
01 May 03	30 Sep 03	KMOS-TV, Channel 6/Sedalia	Warrensburg, MO	0	0	0
01 May 03	30 Sep 03	KNCT-TV, Channel 46/Killeen	Killeen, TX	0	0	0
01 May 03	30 Sep 03	KNME-TV, Channel 5/Albuquerque	Albuquerque, NM	0	0	0
01 May 03	30 Sep 03	KNME-TV, Channel 5/Albuquerque	Albuquerque, NM	0	0	0
01 May 03	30 Sep 03	KNPB-TV, Channel 5/Reno	Reno, NV	0	0	0
01 May 03	30 Sep 03	KOCE-TV, Channel 50/Huntington Beach	Huntington Beach, CA	0	0	0
01 May 03	30 Sep 03	KOCE-TV, Channel 50/Huntington Beach	Huntington Beach, CA	0	0	0
01 May 03	30 Sep 03	KOCE-TV, Channel 50/Huntington Beach	Huntington Beach, CA	0	0	0
01 May 03	30 Sep 03	KOED-TV, Channel 11/Tulsa	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KOET-TV, Channel 3/Eufaula	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KOZJ-TV, Channel 26/Joplin	Springfield, MO	0	0	0
01 May 03	30 Sep 03	KOZK-TV, Channel 21/Springfield	Springfield, MO	0	0	0
01 May 03	30 Sep 03	KQED-TV, Channel 9/San Francisco	San Francisco, CA	0	0	0
01 May 03	30 Sep 03	KRCB-TV, Channel 22/Rohnert Park	Rohnert Park, CA	0	0	0
01 May 03	30 Sep 03	KRIN-TV, Chanel 32/Waterloo	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KRMA-TV, Channel 6/Denver	Denver, CO	0	0	0
01 May 03	30 Sep 03	KRMA-TV, Channel 6/Denver	Denver, CO	0	0	0
01 May 03	30 Sep 03	KRMJ-TV, Channel 18/Grand Junction	Grand Junction, CO	0	0	0
01 May 03	30 Sep 03	KRSC-TV, Channel 35/Claremore	Claremore, OK	0	0	0
01 May 03	30 Sep 03	KSIN-TV, Channel 27/Sioux City	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KTEP Radio, 88.5 FM/El Paso	El Paso, TX	0	0	0
01 May 03	30 Sep 03	KTIN-TV, Channel 21/Fort Dodge	Johnston, IA	0	0	0
01 May 03	30 Sep 03	KTLC-TV, Channel 43/Oklahoma City	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KTOO-TV, Channel 1/Juneau	Juneau, AK	0	0	0
01 May 03	30 Sep 03	KTSC-TV, Channel 8/Pueblo	Pueblo, CO	0	0	0
01 May 03	30 Sep 03	KUAS-TV, Channel 27/Tucson	Tucson, AZ	0	0	0
01 May 03	30 Sep 03	KUAT-TV, Channel 6/Tucson	Tucson, AZ	0	0	0
01 May 03	30 Sep 03	KWET-TV, Channel 12/Cheyenne	Oklahoma City, OK	0	0	0
01 May 03	30 Sep 03	KYIN-TV, Channel 24/Mason City	Johnston, IA	0	0	0
01 May 03	30 Sep 03	Louisiana Educational Television Authority	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	Macomb Intermediate School District	Clinton Township, MI	0	0	0
01 May 03	30 Sep 03	Manatee County School Board	Bradenton, FL	0	0	0
01 May 03	30 Sep 03	Marion Local Schools	Maria Stein, OH	0	0	0
01 May 03	30 Sep 03	Maryland Public Television	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	MHZ Networks	Falls Church, VA	0	0	0
01 May 03	30 Sep 03	Millcreek Township School District	Erie, PA	0	0	0
01 May 03	30 Sep 03	Missouri School Boards Association	Columbia, MO	0	0	0
01 May 03	30 Sep 03	Missouri School Boards Association	Columbia, MO	0	0	0
01 May 03	30 Sep 03	Montana Public Television	Bozeman, MT	0	0	0
01 May 03	30 Sep 03	NASA-TV	Washington, DC	0	0	0
01 May 03	30 Sep 03	New Jersey Network	Trenton, NJ	0	0	0
01 May 03	30 Sep 03	Northern Michigan University	Marquette, MI	0	0	0
01 May 03	30 Sep 03	Oakland Unified School District	Oakland, CA	0	0	0
01 May 03	30 Sep 03	Ohio Educational Telecommunications Association	Cincinnati, OH	0	0	0
01 May 03	30 Sep 03	Peoria Public Schools	Peoria, IL	0	0	0

01 May 03	30 Sep 03	Prairie Public Television	Fargo, ND	0	0	0
01 May 03	30 Sep 03	Public Broadcasting Atlanta	Atlanta, GA	0	0	0
01 May 03	30 Sep 03	Public Broadcasting Service	Alexandria, VA	0	0	0
01 May 03	30 Sep 03	Redbank Valley School District	New Bethlehem, PA	0	0	0
01 May 03	30 Sep 03	Richardson Independent School District	Richardson, TX	0	0	0
01 May 03	30 Sep 03	Safety-Net	Austin, TX	0	0	0
01 May 03	30 Sep 03	Shawnee Mission School District	Shawnee Mission, KS	0	0	0
01 May 03	30 Sep 03	South Carolina Educational Television	Columbia, SC	0	0	0
01 May 03	30 Sep 03	St. Louis Cooperating School Districts	St. Louis, MO	0	0	0
01 May 03	30 Sep 03	St. Lucie County Public Schools	Fort Pierce, FL	0	0	0
01 May 03	30 Sep 03	Tampa Educational Cable Consortium	Tampa, FL	0	0	0
01 May 03	30 Sep 03	Tennessee Public Television Council	Martin, TN	0	0	0
01 May 03	30 Sep 03	Traverse City Public Schools	Traverse City, MI	0	0	0
01 May 03	30 Sep 03	Vermont Public Television	Colchester, VT	0	0	0
01 May 03	30 Sep 03	Virginia Educational Satellite Network	Richmond, VA	0	0	0
01 May 03	30 Sep 03	Virginia Public Television	Richmond, VA	0	0	0
01 May 03	30 Sep 03	Waterford School District	Waterford, MI	0	0	0
01 May 03	30 Sep 03	WBCC-TV, Channel 68/Cocoa	Cocoa, FL	0	0	0
01 May 03	30 Sep 03	WBCU-TV, Channel 27/ Bowling Green	Bowling Green, OH	0	0	0
01 May 03	30 Sep 03	WBRA-TV, Channel 15/Roanoke	Roanoke, VA	0	0	0
01 May 03	30 Sep 03	WCET-TV, Channel 48/Cincinnati	Cincinnati, OH	0	0	0
01 May 03	30 Sep 03	WCEU-TV, Channel 15/Daytona Beach	Daytona Beach, FL	0	0	0
01 May 03	30 Sep 03	WCVE-TV, Channel 57/Plattsburgh	Plattsburgh, NY	0	0	0
01 May 03	30 Sep 03	WCNY-TV, Channel 24/Syracuse	Syracuse, NY	0	0	0
01 May 03	30 Sep 03	WCNY-TV, Channel 24/Syracuse	Syracuse, NY	0	0	0
01 May 03	30 Sep 03	WCNY-TV, Channel 24/Syracuse	Syracuse, NY	0	0	0
01 May 03	30 Sep 03	WCNY-TV, Channel 24/Syracuse	Syracuse, NY	0	0	0
01 May 03	30 Sep 03	WCPB-TV, Channel 28/Salisbury	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WCVE, Community Idea Stations	Richmond, VA	0	0	0
01 May 03	30 Sep 03	WCVN-TV, Channel 54/Covington	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WCVW-TV, Channel 57/Richmond	Richmond, VA	0	0	0
01 May 03	30 Sep 03	WEAO-TV, Channel 49/Akron	Kent, OH	0	0	0
01 May 03	30 Sep 03	WEBA-TV, Channel 14/Allendale	Columbia, SC	0	0	0
01 May 03	30 Sep 03	WEDU-TV, Channel 3/Tampa	Tampa, FL	0	0	0
01 May 03	30 Sep 03	WEKW-TV, Channel 52/Keene	Durham, NH	0	0	0
01 May 03	30 Sep 03	WENH-TV, Channel 11/Durham	Durham, NH	0	0	0
01 May 03	30 Sep 03	West Virginia Educational Broadcasting Authority	Huntington, WV	0	0	0
01 May 03	30 Sep 03	West Virginia Public Television	Morgantown, WV	0	0	0
01 May 03	30 Sep 03	WETK-TV, Channel 33/Burlington	Colchester, VT	0	0	0
01 May 03	30 Sep 03	WFPT-TV, Channel 62/Frederick	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WFSG-TV, Channel 56/Panama City	Tallahassee, FL	0	0	0
01 May 03	30 Sep 03	WFSU-TV, Channel 11/Tallahassee	Tallahassee, FL	0	0	0
01 May 03	30 Sep 03	WGCU-TV, Channel 3/Fort Myers	Fort Myers, FL	0	0	0
01 May 03	30 Sep 03	WGPT-TV, Channel 36/Oakland	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WGTE-TV, Channel 30/Toledo	Toledo, OH	0	0	0
01 May 03	30 Sep 03	WGVU-TV, Channel 35/ Grand Rapids	Grand Rapids, MI	0	0	0
01 May 03	30 Sep 03	WHRO-TV, Channel 15/Norfolk	Norfolk, VA	0	0	0
01 May 03	30 Sep 03	WHTJ-TV, Channel 41/Charlottesville	Charlottesville, VA	0	0	0
01 May 03	30 Sep 03	Wisconsin Educational Telecommunications Board	Madison, WI	0	0	0
01 May 03	30 Sep 03	WITF-TV, Channel 33/Harrisburg	Harrisburg, PA	0	0	0
01 May 03	30 Sep 03	WITV-TV, Channel 7/Charleston	Columbia, SC	0	0	0
01 May 03	30 Sep 03	WJCT-TV, Channel 7/Jacksonville	Jacksonville, FL	0	0	0
01 May 03	30 Sep 03	WJWJ-TV, Channel 16/Beaufort	Beaufort, SC	0	0	0
01 May 03	30 Sep 03	WKAS-TV, Channel 25/Ashland	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKDP-TV, Channel 29/Paducah	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKGB-TV, Channel 53/Bowling Green	Lexington, KY	0	0	0

01 May 03	30 Sep 03	WKHA-TV, Channel 35/Hazard	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKLE-TV, Channel 46/Lexington-Richmond	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKMA-TV, Channel 35/Madisonville	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKMJ-TV, Channel 68/Louisville	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKMR-TV, Channel 38/Morehead	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKMU-TV, Channel 21/Murray-Mayfield	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKOH-TV, Channel 31/Owensboro-Henderson	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKON-TV, Channel 52/Owenton	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKPI-TV, Channel 22/Pikeville	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKSO-TV, Channel 29/Somerset	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WKZT-TV, Channel 23/Elizabethtown	Lexington, KY	0	0	0
01 May 03	30 Sep 03	WLAE-TV, Channel 32/New Orleans	New Orleans, LA	0	0	0
01 May 03	30 Sep 03	WLED-TV, Channel 49/Littleton	Durham, NH	0	0	0
01 May 03	30 Sep 03	WLIW-TV, Channel 21/New York	Plainview, NY	0	0	0
01 May 03	30 Sep 03	WLIW-TV, Channel 21/New York	Plainview, NY	0	0	0
01 May 03	30 Sep 03	WLIW-TV, Channel 21/New York	Plainview, NY	0	0	0
01 May 03	30 Sep 03	WLJT-TV, Channel 11/Martin	Martin, TN	0	0	0
01 May 03	30 Sep 03	WLJT-TV, Channel 11/Martin	Martin, TN	0	0	0
01 May 03	30 Sep 03	WLPB-TV, Channel 27/Baton Rouge	Baton Rouge, LA	0	0	0
01 May 03	30 Sep 03	WLRN-TV, Channel 17/Miami	Miami, FL	0	0	0
01 May 03	30 Sep 03	WLVT-TV, Channel 39/Bethlehem	Bethlehem, PA	0	0	0
01 May 03	30 Sep 03	WMFE-TV, Channel 24/Orlando	Orlando, FL	0	0	0
01 May 03	30 Sep 03	WMPB-TV, Channel 67/Baltimore	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WMPT-TV, Channel 22/Annapolis	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WNED-TV, Channel 17/Buffalo	Buffalo, NY	0	0	0
01 May 03	30 Sep 03	WNED-TV, Channel 17/Buffalo	Buffalo, NY	0	0	0
01 May 03	30 Sep 03	WNEO-TV, Channel 45/Alliance	Kent, OH	0	0	0
01 May 03	30 Sep 03	WNIN-TV, Channel 9/Evansville	Evansville, IN	0	0	0
01 May 03	30 Sep 03	WNMU-TV, Channel 13/Marquette	Marquette, MI	0	0	0
01 May 03	30 Sep 03	WNPT-TV, Channel 8/Nashville	Nashville, TN	0	0	0
01 May 03	30 Sep 03	WNVC-TV, Channel 56/Fairfax	Falls Church, VA	0	0	0
01 May 03	30 Sep 03	WNVTV, Cable/Washington Metro Area	Falls Church, VA	0	0	0
01 May 03	30 Sep 03	WNYE-TV, Channel 25/New York City	Brooklyn, NY	0	0	0
01 May 03	30 Sep 03	WNYE-TV, Channel 25/New York City	Brooklyn, NY	0	0	0
01 May 03	30 Sep 03	WOSU-TV, Channel 34/Columbus	Columbus, OH	0	0	0
01 May 03	30 Sep 03	WOUB-TV, Channel 20/Athens	Athens, OH	0	0	0
01 May 03	30 Sep 03	WOUC-TV, Channel 44/Cambridge	Athens, OH	0	0	0
01 May 03	30 Sep 03	WPBA-TV, Channel 30/Atlanta	Atlanta, GA	0	0	0
01 May 03	30 Sep 03	WPBO-TV, Channel 42/Portsmouth	Columbus, OH	0	0	0
01 May 03	30 Sep 03	WPBT-TV, Channel 2/Miami	Miami, FL	0	0	0
01 May 03	30 Sep 03	WPSX-TV, Channel 3/Clearfield	University Park, PA	0	0	0
01 May 03	30 Sep 03	WPTD-TV, Channel 16/Dayton	Dayton, OH	0	0	0
01 May 03	30 Sep 03	WPTO-TV, Channel 14/Oxford	Dayton, OH	0	0	0
01 May 03	30 Sep 03	WRJA-TV, Channel 27/Sumter	Sumter, SC	0	0	0
01 May 03	30 Sep 03	WRLK-TV, Channel 35/Columbia	Columbia, SC	0	0	0
01 May 03	30 Sep 03	WSBE-TV, Channel 36/Providence	Providence, RI	0	0	0
01 May 03	30 Sep 03	WSKG Public Telecommunications Council	Binghamton, NY	0	0	0
01 May 03	30 Sep 03	WSKG Public Telecommunications Council	Binghamton, NY	0	0	0
01 May 03	30 Sep 03	WSRE-TV, Channel 23/Pensacola	Pensacola, FL	0	0	0
01 May 03	30 Sep 03	WSVP-TV, Channel 30/Fort Myers-Naples	Bonita Springs, FL	0	0	0
01 May 03	30 Sep 03	WUFT-TV, Channel 5/Gainesville	Gainesville, FL	0	0	0
01 May 03	30 Sep 03	WUSF-TV, Channel 16/Tampa	Tampa, FL	0	0	0
01 May 03	30 Sep 03	WVER-TV, Channel 28/Rutland	Colchester, VT	0	0	0
01 May 03	30 Sep 03	WVIA-TV, Channel 44/Pittston	Pittston, PA	0	0	0
01 May 03	30 Sep 03	WVIZ-TV, Channel 25/Cleveland	Cleveland, OH	0	0	0
01 May 03	30 Sep 03	WVIZ-TV, Channel 25/Cleveland	Cleveland, OH	0	0	0
01 May 03	30 Sep 03	WVPT-TV, Channel 51/Harrisonburg	Harrisonburg, VA	0	0	0

01 May 03	30 Sep 03	WVTA-TV, Channel 41/Windsor	Colchester, VT	0	0	0
01 May 03	30 Sep 03	WVTB-TV, Channel 20/Saint Johnsbury	Colchester, VT	0	0	0
01 May 03	30 Sep 03	WWPB-TV, Channel 31/Hagerstown	Owings Mills, MD	0	0	0
01 May 03	30 Sep 03	WXEL-TV, Channel 42/West Palm Beach	West Palm Beach, FL	0	0	0
01 May 03	30 Sep 03	WXXI Public Broadcasting Council	Rochester, NY	0	0	0
01 May 03	30 Sep 03	WXXI Public Broadcasting Council	Rochester, NY	0	0	0
01 May 03	30 Sep 03	WYES-TV, Channel 12/New Orleans	New Orleans, LA	0	0	0
01 May 03	30 Sep 03	Wyoming Public Television	Riverton, WY	0	0	0

A456. Tours of the Kuiper Airborne Observatory (KAO) Interior

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: The Kuiper Airborne Observatory (KAO) is the predecessor of SOFIA. It had a 0.9-meter telescope onboard a converted C-141 cargo jet and was operated by NASA out of the Ames Research Center and the Moffett Federal Airfield from 1975 until 1996. It is presently a museum piece and remains parked at NASA Ames Research Center.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Dr. Ed Erickson	NASA Ames Research Center	Moffett Field, CA
	Mr. Allan Meyer	Universities Space Research Association	Moffett Field, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Jul 03	03 Jul 03	NASA Ames Research Center	Moffett Field, CA	30	0	0
13 Sep 03	14 Sep 03	NASA Ames Research Center	Moffett Field, CA	0	1,000	0

A457. TRACE: Image Distribution to the Public

Theme(s): SEC

Msn/Prgm: TRACE[B106]

Description: The TRACE mission receives bi-weekly requests for images from a variety of sources ranging from magazines to book publishers to people just interested in the amazing images that TRACE produces. The images are exciting and dynamic for the public to see.

Lead: Dr. Carolus Schrijver, Lockheed Martin Solar and Astrophysics Lab, Palo Alto, CA 94304. E-mail: schryver@lmsal.com. Phone: 650-424-2907.

Contact: Ms. Dawn Myers, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: dcm@chippewa.nascom.nasa.gov. Phone: 301-286-5283.

Primary URL: <http://vestige.lmsal.com/TRACE>

2nd URL: <http://vestige.lmsal.com/TRACE/POD/TRACEpod.html>

Scientist(s):	Ms. Zoe Frank	Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA
	Dr. Karel Schryver	Lockheed Martin Solar and Astrophysics Lab	Palo Alto, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Jan 03	30 Sep 03	NASA Goddard Space Flight Center	Greenbelt, MD	0	10300	0

A458. Tribute to the 2003 U.S. Physics Olympiad Team

Theme(s): ASO, SEU

Msn/Prgm: OSS/Outreach[B7]

Description: The 2003 U.S. National Physics Team, composed of 24 of the best and brightest physics and mathematics high school students from around the country, were the guests of honor at a special tribute, hosted jointly by the American Institute of Physics and OSS. The featured speaker was astrophysicist John C. Mather, Senior Project Scientist for the James Webb Space Telescope at NASA's Goddard Space Flight Center. This special tribute came during the weeklong physics competition that was held at the University of Maryland, College Park. The winners of this 2003 competition represented the United States at the 34th International Physics Olympiad in Taipei, Taiwan, where they placed first out of 54 countries, sweeping the competition with five medals and four special prizes. This was the first time a U.S. student has taken the top honor since 1989, and the first time in the competition's history that the U.S. team has been the top-ranking country.

Lead: Dr. James Stith, American Institute of Physics, College Park, MD 20740-3843. E-mail: jstith@aip.org. Phone: 301-209-3126.

Contact: Dr. Philip Sakimoto NASA Office of Space Science Washington, DC
20546. E-mail: phil.sakimoto@hq.nasa.gov. Phone: 202-358-0949.

Primary URL: <http://www.aapt.org/olympiad2003>

2nd URL: <http://www.aip.org>

Scientist(s): Dr. J. David Bohlin NASA Office of Space Science Washington, DC
Dr. John Mather NASA Goddard Space Flight Center Greenbelt, MD

Partner(s): American Association of Physics Teachers College Park, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
20 May 03	20 May 03	Rayburn House Office Building	Washington, DC	74	0	0

A459. University of Iowa Experimental Space Research Projects Talk

Theme(s): SEC

Msn/Prgm: Polar[B110]

Description: The talk was presented to the Iowa City Amateur Radio Club. The presentation included a tour of spaceflight fabrication labs

Lead: Dr. William Robison, University of Iowa, Iowa City, IA 52242. E-mail: william-robison@uiowa.edu.

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
13 Nov 02	13 Nov 02	University of Iowa	Iowa City, IA	30	0	0

A460. University of New Hampshire: Public Television Interview

Theme(s): SEC

Msn/Prgm: ACE[B98]

Description: Topics covered during the interview included the Columbia accident, importance of manned and unmanned space program, and University of New Hampshire's involvement in NASA programs and research fields.

Lead: Dr. Eberhard Moebius, University of New Hampshire, Durham, NH 03824. E-mail: eberhard.moebius@unh.edu. Phone: 603-862-3097.

Primary URL: <http://www.nhptv.org/outlook>

Scientist(s): Dr. James Ryan University of New Hampshire Durham, NH
Mr. Lukas Saul University of New Hampshire Durham, NH

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
03 Feb 03	03 Feb 03	New Hampshire Public Television	Durham, NH	0	0	0

A461. Voyager Conferences

Theme(s): SEC

Msn/Prgm: Voyager[B90]

Description: Voyager/Ulysses Team Members attend and support most educational, and minority conferences where NASA representation is required. The conferences include NSTA, CSTA, NCTM, MAES International Symposium, and the Georgia Council of Teachers of Mathematics Workshop.

Lead: Dr. Andrea Angrum, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: andrea.angrum@jpl.nasa.gov. Phone: 818-354-6775.

Primary URL: <http://voyager.jpl.nasa.gov>

Scientist(s): Mr. Art Hammon NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
20 Sep 03	20 Sep 03	Arizona State University	Tempe, AZ	137	0	0

A462. Voyager Speakers Bureau

Theme(s): SEC, SSE

Msn/Prgm: Voyager[B90]

Description: In this program, students learn to appreciate the great distances between the planets and their comparable sizes, view the solar system in three dimensions in a useful scale, and visualize the path of the Voyager spacecraft and their present distances and position. The Voyager Project office provides speakers upon request via the public services office at NASA's Jet Propulsion Laboratory.

Lead: Dr. Andrea Angrum, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: andrea.angrum@jpl.nasa.gov. Phone: 818-354-6775.

Primary URL: <http://voyager.jpl.nasa.gov>

Scientist(s): Mr. Tim Hogle NASA Jet Propulsion Laboratory Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
25 Jan 03	25 Jan 03	Associated Radio Amateurs of Long Beach	Long Beach, CA	0	50	0
02 Aug 03	02 Aug 03	Mt. Bachelor Star Party	Sunriver, OR	0	85	0

A463. West Virginia: Mars Watch E/PO Activities

Theme(s): SSE

Msn/Prgm: MARSSB[B17], Mars E/PO[B40], MSL[B46]

Description: A community sky viewing of Mars that also included a short planetarium presentation and introduction to sky viewing materials available through NASA. The Wheeling area astronomy club, Astrolab, co-sponsored this event.

Lead: Mr. Steve Mitch, Benedum Planetarium, Wheeling, WV 26003.

Contact: Ms. Jane Neuenschwander, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: jneuen@cet.edu. Phone: 304-243-4416.

Primary URL: <http://www.planetary.org/marswatch2003>

2nd URL: <http://www.neofoundation.org/astrolabe>

Scientist(s): Ms. Jane Neuenschwander Wheeling Jesuit University Wheeling, WV

Partner(s): Astrolab Astronomy Club Wheeling, WV

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
26 Aug 03	26 Aug 03	Benedum Planetarium	Wheeling, WV	0	10,050	0

A464. WMAP Informal Outreach: MAPping the Cosmic Microwave Background

Theme(s): SEU

Msn/Prgm: WMAP[B79]

Description: The objectives of this two-session course were to describe to the participants the results of the MAP mission to date. This course was made available to participants in the Adler Planetarium and Astronomy Museum's course program. The course was hosted in Adler's CyberSpace Classroom.

Contact: Ms. Lindsay Bartolone, Adler Planetarium and Astronomy Museum, Chicago, IL 60605. E-mail: clark@astro.princeton.edu. Phone: 312-322-0316.

Primary URL: <http://map.gsfc.nasa.gov>

2nd URL: <http://www.astro.princeton.edu/~clark/teachersguide.html>

Scientist(s): Ms. Lindsay Bartolone Adler Planetarium and Astronomy Museum Chicago, IL

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Mar 03	12 Mar 03	Adler Planetarium and Astronomy Museum	Chicago, IL	22	0	0

A465. Wyoming Astronomy Camp

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: S2N2 B/F[B21]

Description: Wyoming Astronomy Camp is a living/learning summer community of students, teachers, and scientists working together to understand the universe in an intense, fun-filled, educational weekend with a goal of sparking the imaginations and interest of all that attend. The program focuses on disadvantaged middle and high school students from around the state of Wyoming from traditionally underrepresented groups with an interest in astronomy and physics. This program gives these students an opportunity to observe through professional-

grade telescopes, experiment with technology, explore furthering their education in a physics or astronomy direction, and consider a college education. It was held on two weekends, June 27–29 and July 11–13. The first weekend, students from the Casper Boys and Girls Clubs visited and the second weekend students from Boys and Girls Clubs from around Wyoming visited. It was held at the University of Wyoming Physics and Astronomy Department, where faculty, graduate students and undergraduates participated in design and presentation of activities. Several department facilities were utilized, including the STAR Observatory, the Red Buttes Observatory, and the Planetarium.

Lead: Dr. Kathleen Harper, Wyoming Space Grant Consortium, Laramie, WY 82071-3905. E-mail: KDug@uwyo.edu. Phone: 307-766-2862.

Primary URL: <http://wyomingspacegrant.uwyo.edu/camp.htm>

2nd URL: <http://wyomingspacegrant.uwyo.edu/s2n2.htm>

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Jun 03	27 Jun 03	University of Wyoming	Laramie, WY	35	0	0
11 Jul 03	11 Jul 03	University of Wyoming	Laramie, WY	35	0	0

Scientist Involvement

A466. AAS Division of Planetary Sciences Activities

Theme(s): SSE

Msn/Prgm: Solar System Exploration (SSE) Forum[B12]

Description: The SSE Forum has had a long-term relationship with the American Astronomical Society/Division for Planetary Sciences (DPS). Dr. Ellis Miner, Co-Director of the SSE Forum, has been serving as the DPS press officer for 4 years. Twelve poster papers covering the gamut of resources available for DPS scientists who are interested in being involved in E/PO activities were presented by members of the NASA Space Science Education Support Network and others at the DPS Meeting in Monterey, CA, during the weeklong conference. A NASA Space Science Education Support Network booth with handouts was in the exhibit hall. There were about 700 planetary scientists present at the conference.

Lead: Dr. Ellis Miner, NASA Jet Propulsion Laboratory, Pasadena, CA 91109. E-mail: Ellis.D.Miner@jpl.nasa.gov. Phone: 818-354-4450.

Primary URL: <http://www.aas.org/~dps/dps.html>

2nd URL: <http://sseforum.jpl.nasa.gov>

Scientist(s):	Dr. Larry Lebofsky	University of Arizona	Tucson, AZ
	Dr. Rosaly Lopes	NASA Jet Propulsion Laboratory	Pasadena, CA
	Mr. Louis Mayo	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Ellis Miner	NASA Jet Propulsion Laboratory	Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	30	750	0

A467. Electronic Newsletter: Regional Opportunities for Scientists in Education

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: SSI B/F[B20]

Description: The NASA Space Science E/PO Broker/Facilitator at the Space Science Institute in Boulder, CO, has an electronic bulletin called Regional Opportunities for Scientists in Education (ROSIE). The newsletter is a service to space or earth scientists interested in science E/PO, and leaders of E/PO programs in scientific research institutions that do space or earth science research. The bulletin is targeted toward those who live and work in the western states. ROSIE will inform participants of regional and national opportunities such as: (1) job announcements; (2) E/PO funding opportunities; (3) professional development opportunities in education and public outreach; (4) regional E/PO involvement opportunities; and (5) information about potential partners and networking opportunities. ROSIE is a monthly newsletter, with occasional special bulletins for time-critical opportunities. The first electronic ROSIE newsletter was distributed in April 2003 to over 2,500 recipients. Since then, the SSI Broker has received over 200 requests to sign on to the list. ROSIE currently has a membership of over 2,700 members.

Contact: Ms. Christy Edwards, Space Science Institute, Boulder, CO 80301. E-mail: edwardcl@colorado.edu. Phone: 720-974-5824.

Primary URL: <http://www.spacescience.org>

A468. Involving Scientists in E/PO

Theme(s): ASO

Msn/Prgm: Kepler[B24]

Description: Kepler E/PO presents ways that scientists and engineers can become involved in E/PO. Presentations are made at scientific conferences and meetings, as well as at specialized events.

Lead: Mr. Alan Gould, Lawrence Hall of Science, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.

Primary URL: <http://www.lawrencehallofscience.org/kepler>

Event(s):

Dates		Location	Participants		
Start Date	End Date	Venue	City, State	DIR	ANON WEB
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science			
			Monterey, CA	220	0 0

A469. Lunar and Planetary Science Conference (LPSC) Workshops for Scientists on E/PO Topics

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: LPI B/F[B16]

Description: During the 2003 LPSC, brokers from the Lunar and Planetary Institute (LPI) hosted a 1-day pre-conference workshop for scientists interested in becoming more involved in E/PO. The program explored corporate and private entities as potential funding sources and participants in space science outreach programs. Through a mixture of short lectures and moderated discussions, participants examined ways to approach corporations and private foundations for the funding of worthwhile outreach projects. The focus was on energy, mining, and technology companies as potential donors from the corporate world. Private foundations with an interest in funding space-science-related projects were identified and discussed. Participants learned what types of projects were most favorably viewed by these entities and the typical funding levels provided. Also considered were possibilities for participation in existing corporate outreach programs.

Lead: Dr. Robert Herrick, Lunar and Planetary Institute, Houston, TX 77058-1113. E-mail: herrick@lpi.usra.edu. Phone: 281-486-2116.

Primary URL: <http://www.lpi.usra.edu/education/broker.shtml>

A470. NESSIE Outreach at Professional Conferences

Theme(s): ASO, SEC, SEU, SSE

Msn/Prgm: NESSIE B/F[B18]

Description: New England Space Science Initiative in Education (NESSIE) agents have promoted space science education at a variety of professional conferences. These opportunities for professional outreach and development directly involved space scientists as the target audience or as partners in educational programming for formal and informal educators. This year, NESSIE represented the NASA Space Science E/PO Support Network at a historical conference on the 19th century navigator and astronomer Nathaniel Bowditch, and at conferences of the Association of Science-Technology Centers (ASTC), the American Astronomical Society (AAS), and the Rhode Island Science Teachers Association (RISTA).

Lead: Dr. Cary Sneider, Museum of Science, Boston, MA 02114-1099. E-mail: csneider@mos.org. Phone: 617-589-0227.

Contact: Dr. William Waller, Tufts University, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

Primary URL: <http://www.mos.org/nessie>

2nd URL: <http://astc.org>

Scientist(s):	Ms. Cathleen Clemens	Museum of Science	Boston, MA
	Dr. Steven Dick	U.S. Naval Observatory	Washington, DC
	Ms. Mary Dussault	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Sethanne Howard	U.S. Naval Observatory	Washington, DC
	Dr. John Huchra	Harvard-Smithsonian Center for Astrophysics	Cambridge, MA
	Dr. Cherilynn Morrow	Space Science Institute	Boulder, CO
	Dr. Cary Sneider	Museum of Science	Boston, MA
	Dr. William Waller	Tufts University	Medford, MA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
12 Oct 02	15 Oct 02	Association of Science and Technology Centers Conference	Charlotte, NC	110	0	0
08 Nov 02	10 Nov 02	Bowditch Institute Conference	Salem, MA	100	0	0
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	100	0

A471. SDO: Dynamic Sun Workshops

Theme(s): SEC

Msn/Prgm: SDO[B115]

Description: Dynamic Sun Workshops are conducted to help engineers, scientists and other project personnel gain a better understanding of NASA's Education Enterprise and to generate excitement for NASA and SDO E/PO programs. These workshops provide the tools and resources necessary to conduct successful and rewarding outreach experiences. Agenda items included guest speakers who share their lessons learned for doing classroom and community presentations, demonstrations of "canned" presentations and available resources already developed by NASA's E/PO community, and lots of hands-on activities that could be easily integrated into a classroom. Dynamic Sun workshops will be scheduled at various times throughout the year to encourage everyone to help inspire the next generation.

Lead: Ms. Emilie Drobnes, NASA Goddard Space Flight Center, Greenbelt, MD 20771. E-mail: Emilie@ihy.gsfc.nasa.gov. Phone: 301-286-3146.

Primary URL: <http://dynamicsun.gsfc.nasa.gov>2nd URL: <http://sdo.gsfc.nasa.gov>

Scientist(s):	Dr. Carol Jo Crannell	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Emilie Drobnes	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Robert Duffin	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Peter Gallagher	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Ken Hibbard	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Steele Hill	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Therese Kucera	NASA Goddard Space Flight Center	Greenbelt, MD
	Ms. Barbara Lambert	NASA Goddard Space Flight Center	Greenbelt, MD
	Mr. Satoshi Morita	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Dawn Myers	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. W. Dean Pesnell	NASA Goddard Space Flight Center	Greenbelt, MD
	Dr. Barbara Thompson	NASA Goddard Space Flight Center	Greenbelt, MD

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
14 Aug 03	14 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	21	22	0
22 Aug 03	22 Aug 03	NASA Goddard Space Flight Center	Greenbelt, MD	14	17	0

A472. SOFIA Conference Exhibit and Booth

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: The SOFIA E/PO program exhibits at professional astronomy conferences. Aside from accomplishing outreach to the scientific community, the SOFIA exhibit attracts the interest of teachers, journalists and members of the general public attending these conferences. The exhibit consists of an infrared camera demonstration, literature on the education and science programs of SOFIA, and staff members who answer questions and interact with visitors.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

Contact: Ms. Leslie Proudfit, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: lwolber@mail.arc.nasa.gov. Phone: 650-604-2125.

Primary URL: http://sofia.arc.nasa.gov/Edu/calendar/edu_calendar.html

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Edna DeVore	SETI Institute	Mountain View, CA

Mr. Allan Meyer	Universities Space Research Association	Moffett Field, CA
Ms. Leslie Proudfit	NASA Ames Research Center	Moffett Field, CA
Dr. Goeran Sandell	NASA Ames Research Center	Moffett Field, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	2,000	0
19 May 03	25 May 03	American Astronomical Society Meeting	Nashville, TN	0	800	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	0	600	0

A473. SOFIA E/PO Conference Posters

Theme(s): ASO

Msn/Prgm: SOFIA[B26]

Description: Poster presentations at professional meetings regarding various aspects of the SOFIA E/PO program.

Lead: Dr. Dana Backman, NASA Ames Research Center, Moffett Field, CA 94035-1000. E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.Primary URL: <http://sofia.arc.nasa.gov/Edu/edu.html>

Scientist(s):	Dr. Dana Backman	NASA Ames Research Center	Moffett Field, CA
	Mr. Michael Bennett	Astronomical Society of the Pacific	San Francisco, CA
	Ms. Sanlyn Buxner,	Fiske Planetarium	Boulder, CO
	Ms. Edna DeVore	SETI Institute	Mountain View, CA
	Dr. Adrienne Gauthier	University of Arizona	Tucson, AZ
	Mr. John Keller	University of Arizona	Tucson, AZ
	Dr. Timothy Slater	University of Arizona	Tucson, AZ
	Dr. Michelle Thaller	California Institute of Technology	Pasadena, CA
Partner(s):	Astronomical Society of the Pacific		San Francisco, CA
	SETI Institute		Mountain View, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	0	2,000	0
11 Feb 03	13 Feb 03	NASA Astrobiology Institute General Meeting	Tempe, AZ	0	200	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science	Monterey, CA	0	600	0

A474. Space Science Education at the University of Wisconsin

Theme(s): SSE

Msn/Prgm: SRT[B3]

Description: The University of Wisconsin-Madison (UW-Madison) Office of Space Science Education (OSSE) supports education and public outreach programs that have been developed in collaboration with on-campus space science researchers. NASA-funded scientists from the Space Science and Engineering Center, Space Astronomy Laboratory, and the Departments of Astronomy and Physics partner with OSSE Education staff to develop and participate in a broad spectrum of formal and informal space science education programs that are based on the OSSE philosophy of emphasizing a balance of current content and solid pedagogy. An example of these current topics includes the theme of "Springtime on Neptune" which exploits colored images to capture the imaginations of the various formal and informal education audiences. Activities include professional development workshops and inservices for teachers, K-12 curriculum mapping for State school districts, school visits and presentations, space science education summer sessions that target the unique learning needs of the State's minority and low-income students, public lectures, special topical presentations at local observatories and planetariums, and innovative distance-learning programs that feature UW-Madison space science research that is supported by NASA.

Lead: Dr. Sanjay Limaye, University of Wisconsin-Madison, Madison, WI 53715. E-mail: sanjayl@ssec.wisc.edu. Phone: 608-262-9541.Primary URL: <http://tellus.ssec.wisc.edu/outreach>

Scientist(s):	Dr. Sanjay Limaye	University of Wisconsin-Madison	Madison, WI
	Dr. Dan McCammon	University of Wisconsin-Madison	Madison, WI

Dr. Rosalyn Pertzborn NASA Office of Space Science Washington, DC
 Dr. Lawrence Sromovsky University of Wisconsin-Madison Madison, WI
 Dr. Peter Timbie University of Wisconsin-Madison Madison, WI

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
27 Nov 02	27 Nov 02	University of Wisconsin-Madison	Madison, WI	56	0	0
07 Dec 02	07 Dec 02	Adler Planetarium and Astronomy Museum	Chicago, IL	15	0	0
08 Feb 03	08 Feb 03	DePaul University	Chicago, IL	18	0	0
09 Mar 03	11 Mar 03	Wisconsin Society of Science Teachers Convention				
			Wisconsin Dells, WI	200	0	0
23 Jun 03	27 Jun 03	University of Wisconsin-Madison	Madison, WI	18	0	0
11 Aug 03	15 Aug 03	University of Wisconsin-Madison	Madison, WI	10	0	0
11 Aug 03	15 Aug 03	University of Wisconsin-Madison	Madison, WI	10	0	0

A475. Spitzer Space Telescope Conference Support

Theme(s): ASO

Msn/Prgm: SST[B25]

Description: We report here the conferences at which the Spitzer Space Telescope had a booth, a presentation, or other specific presence. This section does not include conferences where the only participation was attendance.

Lead: Ms. Doris Daou, California Institute of Technology, Pasadena, CA 91125.

Primary URL: <http://www.aas.org>

Scientist(s): Mr. Charles Bluehawk California Institute of Technology Pasadena, CA
 Ms. Doris Daou California Institute of Technology Pasadena, CA
 Mr. James Keller California Institute of Technology Pasadena, CA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
05 Jan 03	10 Jan 03	American Astronomical Society Meeting	Seattle, WA	5,000	0	0
27 Mar 03	30 Mar 03	National Science Teachers Association National Conference				
			Philadelphia, PA	60,000	0	0
19 May 03	25 May 03	American Astronomical Society Meeting	Nashville, TN	700	0	0
01 Sep 03	05 Sep 03	American Astronomical Society, Division of Planetary Science				
			Monterey, CA	740	0	0

A476. Sun-Earth Day Workshop

Theme(s): SEC

Msn/Prgm: Sun-Earth Connection (SEC) Forum[B14], MARSSB[B17], IMAGE[B100], RHESSI[B102], SOHO[B112], LWS[B114]

Description: This activity involved a coordinated effort lead by Dr. William Mackie who was on a 2-year NASA administrative exchange program from NASA Glenn Research Center to serve Cheyney and Lincoln Universities. The goals for this activity were to introduce Cheyney and Lincoln science and pre-service faculty members to resources available from the NASA OSS Education Support Network, featuring the Sun-Earth Connection educator kit in particular. SECEF representatives from the Sun-Earth Connection Forum from NASA Goddard, the NASA Aerospace Education Specialist (AES) representative for Pennsylvania, and the director of the Pennsylvania Space Grant Coalition were brought together to support professional development activities for the Cheyney and Lincoln University faculty. The Franklin Institute chief astronomer, Derrick Pitts, served as host and program lead for this event.

Lead: Dr. William Mackie, NASA Glenn Research Center, Cleveland, OH 44135.

Contact: Dr. Laurie Ruberg, Wheeling Jesuit University, Wheeling, WV 26003. E-mail: lruberg@cet.edu. Phone: 304-243-2480.

Primary URL: <http://teachspacescience.stsci.edu/cgi-bin/ssrtop.plex>2nd URL: <http://sunearth.gsfc.nasa.gov>

Scientist(s): Dr. Lisa Brown Pennsylvania State University University Park, PA
 Dr. George Carruthers Naval Research Laboratory Washington, DC
 Dr. Steele Hill NASA Goddard Space Flight Center Greenbelt, MD
 Dr. Stanley Jones Wheeling Jesuit University Wheeling, WV

Partner(s): Ms. Carolyn Ng NASA Goddard Space Flight Center Greenbelt, MD
 Cheyney University of Pennsylvania Cheyney, PA
 Franklin Institute Science Museum Philadelphia, PA
 Lincoln University Lincoln, PA

Event(s):

Dates		Location		Participants		
Start Date	End Date	Venue	City, State	DIR	ANON	WEB
18 Mar 03	18 Mar 03	Maryland Science Center	Baltimore, MD	0	200	0
29 Mar 03	29 Mar 03	Franklin Institute Science Museum	Philadelphia, PA	0	25	0

APPENDIX B. Directory of OSS E/PO Programs

This directory provides overview information on the overall Education and Public Outreach (E/PO) program activities of each Office of Space Science (OSS) mission or program. (A list of mission/program acronyms is provided in appendix I.) Each listing contains the following information:

Title:

Title of the mission or program.

Description:

Overview description of the E/PO activities conducted by the mission or program.

Lead:

Person or organization with lead E/PO responsibility for the mission or program.

Contact:

Person or organization with contact E/PO responsibility for the mission or program.

URL:

Web address for further information on the mission or program's E/PO activities.

Activities (or Grants):

Indexed listing of all E/PO products and activities conducted or supported by the mission or program (or of all active E/PO grants supported by the program).

The listings are grouped into categories as follows:

Office of Space Science

- Grants Programs
- Major Partnerships

Education and Public Outreach (E/PO) Support Network

- Forums
- Broker/Facilitators

Astronomical Search for Origins (ASO) Missions

- Major Missions
- Explorers
- Navigator
- Other NASA Programs

Solar System Exploration (SSE) Missions

- Major Missions
- Discovery
- Mars Exploration Program
- Outer Planets Program
- Other NASA Programs
- International Missions with NASA Participation

Structure and Evolution of the Universe (SEU)

Missions

- Major Missions
- Explorers
- Attached Payloads
- Other NASA Programs
- International Missions with NASA Participation

Sun-Earth Connection (SEC) Missions

- Major Missions
- Explorers
- International Solar-Terrestrial Physics (ISTP)
- Solar Terrestrial Probes (STP)
- Other NASA Programs
- International Missions with NASA Participation

OFFICE OF SPACE SCIENCE

Grants Programs

B1. Initiative to Develop Education through Astronomy and Space Science (IDEAS)

Description: The IDEAS Grant Program is one component of NASA's Space Science E/PO Strategy. The program is administered by the Space Telescope Science Institute (STScI) on behalf of NASA OSS. As part of the overall Space Science E/PO program, the IDEAS Grant Program provides start-up funding for innovative, creative education and public outreach projects that feature active collaboration between astronomers/space scientists and formal education/informal education professionals. Through this effort, the IDEAS objective is to enhance science, mathematics and/or technology education in the United States for K–14 students, teachers and the general public by promoting partnerships that explore new ways to translate astronomy and space science into contexts that will educate and stimulate the interest of students, teachers and the general public. There is a formal panel review of all accepted IDEAS grant program proposals. Each team provides an assessment of the group of proposals assigned as well as recommendations for funding. Based on the team's information, the allocation committee at STScI makes final awards. For IDEAS 2001, the program drew 53 proposal submissions from 25 states and 1 U.S. territory. Thirteen proposals were accepted for funding. A two-phased retrospective of the IDEAS Grant Program took place between July 2002 through September 2003. In Phase 1, an external panel concluded that the processes used by the IDEAS Grant Program were designed to be effective and efficient, and IDEAS had evolved to become a national model. The panel also reaffirmed that the IDEAS Grant Program played a role within the context of NASA Space Science E/PO goals and objectives. Furthermore, the panel agreed that IDEAS was useful as a test-bed for innovative projects that fall outside other NASA science-driven education and public outreach funding opportunities.

Contact: Ms. Heather Bradbury, Space Telescope Science Institute, OPO Formal Education, 3700 San Martin Drive, Baltimore, MD 21218. E-mail: hbradbur@stsci.edu. Phone: 410-338-4968.

URL: <http://ideas.stsci.edu>

Grant(s): "Alien Rescue": Problem-Based Learning in Astronomy [A166]
 Astronomy and the Solar System [A167]
 "Astronomy-in-a-Box": Hands-on Space Science Resource Kit for Grades 5-8 [A107]
 Incorporation of Scientific Ballooning in Science Education [A267]
 Informal Study of the Solar System Through an Interactive Show for Elementary School Children [A108]
 Model-Building: An Instructional Activity for Interpreting Remotely Sensed Image Data [A109]
 "Rocket into the Aurora": A Webcast in Observing Auroral Activity [A268]
 "Solar System Spacecraft Exploration": Real- and Other-World Applications of Math, Science, and Technology [A168]
 "Students Teaching Students": High School Students as Astronomy Teachers [A269]
 "The Stargazer" [A3]
 National Society of Black Physicists Annual Convention [A72]

B2. Minority Institution Initiative (MI Initiative)

Description: OSS and Office of Education Minority University Education and Research Partnership Initiative in Space Science is a grant program with the long-term goals of enhancing minority college and university participation in space science and increasing the understanding of science, technology, and the role of research in contemporary society in a broad and diverse segment of the American population. It emphasizes partnerships among OSS, the space science research community, and minority institutions. During FY 2003, 15 projects were funded under this initiative, including 6 at Historically Black Colleges or Universities, 3 at Hispanic-Serving Institutions, 3 at Tribal Colleges, and 3 at other minority institutions. Collectively, they were engaged in research collaborations with 10 NASA space science missions or suborbital projects and more than 50 working partnerships with major space science research groups. In academic programs, they established on their campuses 25 new or redirected space science faculty positions, 11 new or revised space science degree programs, and 67 new or revised space science courses. They also engaged in a wide variety of teacher training, precollege outreach, and public outreach programs that serve constituencies in their local communities.

Lead: Dr. Philip Sakimoto, NASA Office of Space Science, Code SB, Washington, DC 20546.
 E-mail: phil.sakimoto@hq.nasa.gov. Phone: 202-358-0949.

Grant(s): An Urban Outreach Program in Space Science: A Collaborative Effort Between NASA, Hispanic-serving and Black Universities, and School-age Minority Students [A44]
 Astronomy and Astrophysics Course Development at Salish Kootenai College [A45]

Collision Processes in Astrophysical Plasmas [A46]
 Connecting Sun City with Sun-Earth Connections [A47]
 Enhancement of the Space Science Research Program at South Carolina State University [A48]
 NASA-HBCU Partnership to Enhance Minority Education and Research Participation in the Space Sciences [A49]
 New Opportunities Through Minority Initiatives in Space Science [A50]
 New York City Space Science Research Alliance [A51]
 Partnerships in Astronomy and Astrophysics Education and Research at Southern University [A52]
 SMARTT: Scientists Mentoring Astronomy Research Teams of Tomorrow. [A53]
 South-West Internet Program for the Enhancement of Minority Education [A54]
 Space Science Curriculum at Hampton University: Development of a Minor, Faculty-Enhancement, and K-14 Outreach [A55]
 Space Science Education and Sun-Earth Connection [A56]
 Stars on Earth: Providing Underrepresented New Mexico High School Students with Research Experience in Space Science and Preparation for Math, Science, and Technology [A57]
 York College Observatory Educational Outreach Program (YC00P) [A58]

B3. Supporting Research and Technology (SRT)

Description: The NASA OSS SRT Program provides grants for basic research and instrument development and data analysis for OSS missions. Each grantee also has the opportunity to propose a supplementary E/PO project to be conducted in conjunction with the research project. The outcomes of the funded E/PO projects are reported here.

Lead: Dr. Larry Cooper, NASA Office of Space Science, NASA Headquarters, Washington, DC 20546. E-mail: Larry.P.Cooper@nasa.gov. Phone: 202-358-1531.

URL: <http://space.science.nasa.gov/education/scientists/index.htm>

Grant(s): "A Tale of Two Deserts": Training Educators to Understand Water-Formed Features in the Desert Southwest and on Mars Using Image-Based Exercises [A219]
 Astrobiology and Life Detection Institute for Informal Educators [A22]
 "Astronomy Spectrum of the Week": A Dynamic, Online Database for Astrophysical Spectroscopy [A340]
 Auroral Structure and Dynamics [A23]
 "Breaking the Secret Code of Starlight" [A244]
 "Build Your Own Planet": Development of Origins-Based Grade 6 Science Units [A222]
 Cosmology as a Thematic Approach to High School Physics [A224]
 Exploring the Martian Surface with a Robotic Rover at the Sciencenter Computer Clubhouse [A255]
 "Galactic Cosmic Rays: High-Energy Matter from the Milky Way" [A258]
 Hands-On Astronomy for Teachers [A163]
 "Hotter Than Blue: False Color Images from the Universe" [A24]
 "How Astronomers Use Spectra to Learn About the Sun and Other Stars" [A100]
 Imaging Neptune [A272]
 "Introducing the Heliosphere: From the Kitchen Sink to the Edge of the Solar Wind" [A15]
 "Living in the Universe—Points of View" [A229]
 Lunar Exploration from a Virtual Moon Base [A275]
 Mars Exploration: Visions from Current and Recent NASA Missions [A29]
 "Mars in the Southwest": A Teaching Exhibit for Schoolchildren and the General Public [A16]
 Mars Odyssey E/PO for the OSS Participating Scientist Program: Gamma-Ray and Neutron Spectrometer "MSXcellent!" [A35]
 National Center for Atmospheric Research High-Altitude Observatory: Teachers-in-Residence Program for K-12 Outreach [A182]
 NIGHTGLOW, NASA, and Amateur Radio Talk [A405]
 NIGHTGLOW: Classroom Talk [A299]
 NIGHTGLOW: Hangar Tour [A300]
 NIGHTGLOW: Student Support [A301]
 NIGHTGLOW: Support of PREP Student Balloon Launch [A302]
 Patterns, Cycles, and Change: The Dynamic Interstellar Medium [A18]
 Polar Mesospheric Clouds in the Classroom [A303]
 "Rocks from Space": Teacher Workshops [A192]
 Science Education Gateway/National Virtual Observatory [A414]
 Solar Wind Activities for the Los Alamos Space Science Outreach Program [A196]

Space Science Education at the University of Wisconsin [A474]
 Sun-Earth Connection: Presentation and Inquiry Resources for Scientists in K–12 Classrooms [A237]
 “Teachers Touch the Sky”: Hands-on Workshop in Space Science [A209]
 “The Great Desert”: Geology and Life on Mars and in the Southwest [A211]
 The Student Space Program: Collaborative Learning through Virtual Mission Design [A130]
 Utah State University: Space Science for Student Teachers and Outreach [A216]
 “Visualizing the Interplanetary Environment of the Heliosphere and Solar System, and Interactions with
 Interstellar Matter” [A43]

B4. University Research Centers at Minority Institutions (URC)

Description: The URCs at minority institutions is an Office of Education managed program that is intended to achieve a broadly based, competitive aerospace research capability at Historically Black Colleges and Universities (HBCUs) and Other Minority Universities (OMUs) that will: (1) expand the nation’s base for aerospace research and development, (2) foster new aerospace science and technology concepts, (3) develop mechanisms for increased participation by faculty and students of HBCUs and OMUs in the research programs of NASA’s science and technology Enterprises, and (4) increase the numbers of underrepresented minorities at HBCUs and OMUs who attain advanced degrees in NASA-related fields. Each URC is a multidisciplinary scientific or engineering research center at the host university that contributes to the research program of one or more of the NASA Strategic Enterprises. The Office of Space Science provides funding and technical support to URCs that are working in space science areas.

Lead: Dr. Jeffrey Rosendhal, NASA Office of Space Science, Code S, Washington, DC 20546. E-mail: jeffrey.rosendhal@hq.nasa.gov. Phone: 202-358-2470.

Grant(s): Center for Automated Space Science [A59]
 Center for Gravitational Wave Astronomy [A60]
 National Society of Black Physicists Annual Convention [A72]

Major Partnerships

B5. Adler Center for Space Science Education

Description: The Center for Space Science Education at the Adler Planetarium and Astronomy Museum serves as a nexus between the research and education communities. Its goal is to bring a broad program of astronomy and space science education to the half million annual visitors to the museum and reach beyond the traditional museum setting to provide educational support for students, teachers, and families.

Lead: Dr. Paul Knappenberger, Adler Planetarium and Astronomy Museum, 1300 S. Lake Shore Drive, Chicago, IL 60605. E-mail: paul@adlernet.org. Phone: 312-322-0325.

URL: <http://www.adlerplanetarium.org>

Activities: Adler After School [A240]
 Far Out Friday [A362]
 “Goodbye to Galileo” Coverage [A369]
 International Space Station Audio/Video Contact Event [A377]
 MER Launch Coverage [A389]
 Observing Events/MER Updates [A406]
 Saturn Observing Campaign [A412]
 “To Mars with MER” [A455]

B6. Challenger Center for Space Science Education

Description: Challenger Center for Space Science Education is a global, not-for-profit education organization. Our mission is to use the excitement of space exploration as a theme to create positive learning experiences that raise students’ expectation of success; foster in them a long-term interest in mathematics, science, and technology; and help them develop critical communication, decisionmaking, and team-building skills. Challenger Center works to develop and maintain a scientifically literate world where every individual has a reasonable understanding of science, mathematics, and technology—and the role they play in our lives. During the past 17 years, Challenger Center has proven its commitment to education through a wide variety of innovative educational programs. Each program is designed to help improve math and science scores. Challenger Center employs three astrophysicists who work as both educators and researchers. As researchers, they work part-time focusing on their individual research interests. As educators, they serve as science content reviewers and writers, workshop leaders, featured speakers, and speakers in the classroom and in other venues. Challenger

Center's staff scientists reach thousands of educators, students, parents, and members of the general public each year. "Window on the Universe" and "Voyage: A Journey Through Our Solar System" are two of Challenger Center's E/PO programs that are funded in part by NASA's Office of Space Science. "Window on the Universe" is an education initiative that uses the fields of human space flight and the space sciences to engage entire communities in sustained science, mathematics, and technology education. "Voyage" is a permanent, outdoor scale model of our Solar System on the National Mall.

Lead: Dr. Jeffrey Goldstein, Challenger Center for Space Science Education, 1250 North Pitt Street, Alexandria, VA 22314. E-mail: journey@challenger.org. Phone: 703-683-9740.

URL: <http://www.challenger.org>

Activities: "Journey through the Universe" [A66]
"To Mars with MER" [A455]

B7. OSS Outreach Activities (OSS/Outreach)

Description: In keeping with our education outreach goal of "enhancing the quality of education," OSS participates in a number of education and outreach activities at both the regional and national levels. OSS supports a number of regional and national education conferences attended by thousands of educators in math, science, and technology. OSS supports various professional conferences attended by thousands of scientists from all fields of space science. The activities at these conferences usually entail showcasing an exhibit, distributing educational and outreach material (litho sets, posters, educator guides, strategic plans, etc.), conducting educational workshops, giving keynote speeches, highlighting various space science Web sites, and having NASA employees and scientists answer questions about space science. Finally, OSS staff members participate in more localized events such as conducting talks at local classrooms.

Lead: Ms. Ruth Netting, NASA Office of Space Science, NASA OSS, SB, Washington, DC 20546, Washington, DC 20546. E-mail: rnetting@hq.nasa.gov. Phone: 202-358-0539.

URL: <http://spacescience.nasa.gov/education>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]
NASA Space Science Outreach: International Technology Education Association Annual Conference [A398]
National Society of Black Physicists Annual Convention [A72]
Professional Societies of Minority Scientists/OSS Collaboration [A75]
"Science Concepts in Context" [A235]
Solar System Ambassadors Program [A421]
Solar System Ambassadors Training [A422]
"To Mars with MER" [A455]
Tribute to the 2003 U.S. Physics Olympiad Team [A458]

B8. OSS Science Center Development

Description: In keeping with our public outreach goal of "sharing the excitement of space science discoveries with the public," OSS supports a number of major development projects at science centers and planetariums across the country. Such projects typically entail the development or renovation of exhibit galleries or planetariums, coupled with the development of new exhibits, shows, and education programs based on the results of recent NASA space science missions and discoveries. These efforts make a substantial contribution to the general public's understanding of science and to communicating to students and the public the new understanding of the Universe derived from NASA's space science program.

Lead: Dr. Jeffrey Rosendhal, NASA Office of Space Science, Code S, Washington, DC 20546. E-mail: jeffrey.rosendhal@hq.nasa.gov. Phone: 202-358-2470.

Contact: Dr. Philip Sakimoto, NASA Office of Space Science, Code SB, Washington, DC 20546. E-mail: phil.sakimoto@hq.nasa.gov. Phone: 202-358-0949.

URL: <http://spacescience.nasa.gov/education>

Activities: Observatory, Planetarium, Theater Project [A39]

B9. Passport to Knowledge (P2K)

Description: Passport To Knowledge (P2K) is an ongoing series of interactive learning adventures: its mission is to inform and excite young people about basic scientific principles by sharing with them the people, places and processes of contemporary research. Supported by grants from NASA, the National Science Foundation, NOAA and other public and private resources, P2K has, since 1993, developed and distributed nearly 100 hours of original science programming, via public and NASA-TV. "Live From" specials have originated from the South Pole, the Amazon rainforest, and many NASA Centers. Space-related mini-series such as "Live From The

Hubble Space Telescope” have included technical and educational firsts, such as the first allocation of actual HST observing orbits to K–12 education. Passport To Knowledge, however, is much more than TV programs: P2K uses an integrated suite of video programs, hands-on activities, and online resources to deliver real science, real scientists, real locations, and real learning. From 1998 through the present, P2K has reformatted the original live specials into customized learning modules, once again including videos, Web sites and hands-on activities. Projects such as Passport to the Solar System (PTSS) and Science Concepts in Context (SCiC) use comments from NASA scientists and examples from all of the NASA Enterprises to place core science concepts in a real-world context. In 2002, P2K added a major grant from NSF’s informal science education program to its continuing NASA support to begin the ongoing “To Mars with MER” series (TMwM), following the efforts of the MER mission to design, build, launch, fly and successfully land the twin MER spacecraft on the Red Planet. TMwM features personal stories of the unusually diverse group of men and women behind the mission that will excite all young Americans, especially those in inner cities and remote rural communities.

Lead: Mr. Geoffrey Haines-Stiles, Geoff Haines-Stiles Productions, Inc., 27 Washington Valley Road, Morristown, NJ 07960. E-mail: ghs@passporttoknowledge.com. Phone: 973-656-9403.

URL: <http://passporttoknowledge.com>

Activities: “Live from the Aurora” and “Auroras: Living With a Star” [A274]
 “Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 “To Mars with MER” [A455]

E/PO SUPPORT NETWORK

Forums

B11. Astronomical Search for Origins (ASO Forum)

Description: The Origins program is the scientific study of the long chain of events involved in the formation of the Universe, from the birth of the Universe in the Big Bang to the formation of galaxies, stars, planets, and the chemical elements of life to the profusion of life on Earth and possibly elsewhere. The overarching program funded by NASA that enables researchers to pursue these questions is called “Astronomical Search for Origins and Planetary Systems,” or ORIGINS for short. The ASO Forum is the public gateway to the research results, other data and information, and people behind this quest.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Office of Public Outreach, 3700 San Martin Drive, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.

URL: <http://origins.stsci.edu>

Activities: “Cosmic Questions” Informal Science: Midland Michigan [A353]
 “Exceptional Space Science Materials for Exceptional Students” Workshop [A63]
 Girl Scouts of the USA/NASA Collaboration [A65]
 NASA Space Science Representation at NSACA Annual Conference [A400]
 Origins: Education Forum Workshops/Presentations [A408]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 Space Science Education Resource Directory [A124]
 Space Science for Small Planetariums [A434]
 Special Needs Resource Group [A77]

B12. Solar System Exploration (SSE Forum)

Description: NASA’s SSE Forum serves as the entry point and coordinator for E/PO activities and materials related to NASA’s Solar System Exploration missions and research activities. Our content includes the planets beyond Earth, comets, asteroids, other planetary bodies, and moons.

Lead: Ms. Leslie Lowes, NASA Jet Propulsion Laboratory, 180-109, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Leslie.L.Lowes@jpl.nasa.gov. Phone: 818-393-7734.

Contact: Dr. Ellis Miner, NASA Jet Propulsion Laboratory, MS 183-301, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Ellis.D.Miner@jpl.nasa.gov. Phone: 818-354-4450.

URL: <http://sseforum.jpl.nasa.gov>

Activities: 4-H Youth Development Program: NASA OSS E/PO Collaboration [A330]
 AAS Division of Planetary Sciences Activities [A466]
 Education Standards Matrix (Quilt) Outreach [A225]

“Exceptional Space Science Materials for Exceptional Students” Workshop [A63]
 Girl Scouts of the USA/NASA Collaboration [A65]
 International Planetarium Society Partnership [A28]
 “MarsQuest” Planetarium Show [A5]
 Maryland Science Center SpaceLink Teachers’ Thursdays [A34]
 NASA Space Science Representation at NSACA Annual Conference [A400]
 Practical Uses of Math and Science (PUMAS) [A233]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 “Science Concepts in Context” [A235]
 Solar System Community Events Program [A423]
 Solar System Exploration (SSE) Forum Summer E/PO Intern Program [A311]
 Space Science Education Resource Directory [A124]
 Space Science for Small Planetariums [A434]
 Space Science Workshops for Educators [A198]
 “Taking Apart the Light” [A126]
 “To Mars with MER” [A455]
 Workshops, Sessions, and Seminars for Scientists on K–14 Education and Public Outreach [A141]

B13. Structure and Evolution of the Universe (SEU Forum)

Description: The SEU Forum shares the exciting discoveries and knowledge from NASA’s SEU missions and research programs with educators, students, and the general public. The SEU partnership brings together the rich expertise of scientists, science educators, and education researchers to develop innovative products and programs. Our goal is to contribute to the improvement of pre-college science education and increase science literacy at all levels, focusing attention on the human quest to understand the Universe and our place in the cosmos.

Lead: Dr. Roy Gould, Harvard-Smithsonian Center for Astrophysics, MS 71, 60 Garden Street, Cambridge, MA 02138. E-mail: rgould@cfa.harvard.edu. Phone: 617-496-7689.

Contact: Ms. Mary Dussault, Harvard-Smithsonian Center for Astrophysics, MS 71, 60 Garden Street, Cambridge, MA 02138. E-mail: mdussault@cfa.harvard.edu. Phone: 617-496-7962.

URL: <http://cfa-www.harvard.edu/seuforum>

Activities:
 Author’s Nights at the Harvard-Smithsonian Center for Astrophysics [A341]
 Childrens Night at the Harvard-Smithsonian Center for Astrophysics [A348]
 “Cosmic Questions” Informal Science: “A Comedy about the Universe” [A352]
 “Cosmic Questions” Informal Science: Midland Michigan [A353]
 “Cosmic Questions” Informal Science: “The Real Time Machine” [A354]
 “Cosmic Questions: Our Place in Space and Time” Traveling Exhibition [A9]
 “Cosmic Questions”: Professional Development [A151]
 “Exceptional Space Science Materials for Exceptional Students” Workshop [A63]
 Girl Scouts of the USA/NASA Collaboration [A65]
 “Journey to the Edge of Space and Time” Planetarium Show [A4]
 MicroObservatory Online Telescopes [A231]
 Monthly Observatory Nights at the Harvard-Smithsonian Center for Astrophysics [A391]
 NASA Space Science Representation at NSACA Annual Conference [A400]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 Sci-Fi Movie Nights at the Harvard-Smithsonian Center for Astrophysics [A413]
 “Science Concepts in Context” [A235]
 SEU Forum: Mission Support [A417]
 SEU Forum: Support for Informal Science Education [A418]
 Space Science Education Resource Directory [A124]
 Space Science Workshops for Educators [A198]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
 Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Boston, MA [A138]
 Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Cambridge, MA [A139]

B14. Sun-Earth Connection (SEC Forum)

Description: The Sun-Earth Connection Forum shares the exciting discoveries and knowledge from NASA’s SEC missions and research programs with educators, students, and the general public. The SEC partnership brings together the rich expertise of scientists, educators, and museum personnel to develop innovative products and pro-

grams. Our goal is to contribute to the improvement of pre-college science education and increase science literacy at all levels, focusing attention on the active Sun and its effects on Earth.

Lead: Dr. Richard Vondrak, NASA Goddard Space Flight Center, 690, Greenbelt, MD 20771. E-mail: rvondrak@pop600.gsfc.nasa.gov. Phone: 301-286-8112.

Contact: Dr. Isabel Hawkins, University of California, Berkeley, MC 7450, Berkeley, CA 94720. E-mail: isabelh@ssl.berkeley.edu. Phone: 510-643-5662.

URL: <http://sunearth.gsfc.nasa.gov>

Activities: “Exceptional Space Science Materials for Exceptional Students” Workshop [A63]
 Girl Scouts of the USA/NASA Collaboration [A65]
 NASA Earth and Space Education Workshop [A179]
 NASA Langley Research Center Pre-Service Teacher Institute [A181]
 NASA Space Science Representation at NSACA Annual Conference [A400]
 National Society of Black Physicists Annual Convention [A72]
 “Northern Lights” Planetarium Show [A7]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 RHESSI Teacher Professional Development [A191]
 RHESSI: Curriculum Dissemination [A234]
 “Science Concepts in Context” [A235]
 SEC Forum: Formal Education Student Support [A309]
 SEC Forum: Informal and Public Outreach [A415]
 SEC Forum: Outreach at Conferences [A416]
 SECEF: Formal Education Curriculum Development [A236]
 Solar Week [A123]
 Space Science Education Resource Directory [A124]
 Space Science Workshops for Educators [A198]
 “Space Weather Center” Traveling Exhibit [A19]
 Special Needs Resource Group [A77]
 Student Observation Network (SON) [A319]
 Sun-Earth Connection Education Forum (SECEF) Formal Education Systemic Improvement [A140]
 Sun-Earth Connection Education Forum (SECEF) Preservice Teacher Education [A205]
 Sun-Earth Connection Education Forum (SECEF) Professional Development: Sharing Sun-Earth Connections with Inservice Teachers [A206]
 Sun-Earth Connection Education Forum (SECEF) Targeted Outreach to Native Americans [A79]
 Sun-Earth Connection: Online newsletter [A448]
 Sun-Earth Connections Educator Kit [A125]
 Sun-Earth Day [A449]
 Sun-Earth Day Workshop [A476]
 “The Northern Lights” [A129]
 Workshops, Sessions, and Seminars for Scientists on K–14 Education and Public Outreach [A141]

Broker-Facilitators

B15. DePaul University Broker/Facilitator (DePaul B/F)

Description: The DePaul B/F assists space scientists and members of the education community in the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, and Wisconsin to form partnerships that realize high leverage opportunities for education and outreach.

Lead: Dr. Lynn Narasimhan, DePaul University, 1 E. Jackson St., Chicago, IL 60604. E-mail: cnarasim@depaul.edu. Phone: 773-325-1854.

Contact: Dr. James Sweitzer, DePaul University, DePaul Space Science Center, 1 E. Jackson St., Chicago, IL 60604. E-mail: jsweitze@depaul.edu. Phone: 773-325-4637.

URL: <http://analyzer.depaul.edu/NASABroker>

Activities: Chicago Teachers’ Advisory [A136]
 “Cosmic Questions” Informal Science: Midland Michigan [A353]
 “Cosmic Questions”: Professional Development [A151]
 “Exceptional Space Science Materials for Exceptional Students” Workshop [A63]
 Midwestern Science Teachers Meetings [A177]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]

Space Science Education Resource Directory [A124]
 Space Science for Amateur Astronomers [A433]
 Space Science for Illinois and Indiana Teachers [A197]
 Space Science for Small Planetariums [A434]
 Space Science for the Visually Impaired [A76]
 "To Mars with MER" [A455]
 "To Mars with MER": Brokered Partnership Programs [A80]

B16. Lunar and Planetary Institute Broker/Facilitator (LPI B/F)

Description: The Lunar and Planetary Institute (LPI) provides a bridge between NASA's Solar System scientific missions and the academic community. Through LPI, visiting and staff scientists participate in studies of the current state, evolution, and formation of our Solar System. Resources at the LPI include a computing center, library, collections of lunar and planetary data, an image-processing facility, and publishing and conference services. The E/PO department focuses on providing access to current findings about our Solar System through a variety of programs for the formal and informal education realms. Examples include programs designed to bring space science activities and resources into public and school library settings; planetarium programs exploring space science through Native American legends; educator workshops sharing current solar system research; hands-on classroom activities developed in collaboration with staff scientists; and public outreach events geared toward young children, families, and older students/adults.

Lead: Dr. Stephanie Shipp, Lunar and Planetary Institute, 3600 Bay Area Boulevard, Houston, TX 77058-1113.
 E-mail: shipp@lpi.usra.edu. Phone: 281-486-2109.

URL: <http://www.lpi.usra.edu/education>

Activities: "Explore! Fun with Science" [A361]
 Lunar and Planetary Science Conference (LPSC) Workshops for Scientists on E/PO Topics [A469]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 Space Science Education Resource Directory [A124]
 "To Mars with MER" [A455]

B17. Mid-Atlantic Region Space Science Broker/Facilitator (MARSSB)

Description: MARSSB serves as Broker/Facilitator (B/F) for the following nine states plus the District of Columbia: West Virginia, Pennsylvania, New York, Delaware, New Jersey, Maryland, Virginia, Kentucky, and Ohio. MARSSB employs three themes to fulfill its role as B/F: Systemic Reform through New Strategies, Technology Integration, and Diversity. The Systemic Reform through New Strategies theme will be addressed by offering on-line E/PO resources and by developing collaborations with existing systemic reform initiatives. One of the online resources, the Virtual Design Center (VDC), provides a NASA resource for stimulating development of research-based instructional technology to support classroom activities. UDC also disseminates new knowledge about how learning theories can be applied to instructional technology and classroom environments. The goal for increasing diversity in space science research and education will be addressed by developing an ongoing dialogue and collaboration with MU-SPIN, HBCUs, HISs, and minority initiatives of the NASA Space Science support network. The Technology Integration theme is addressed within the context of the Space Science Educational Activities and Training Sites (SSEATS). SSEATS establishes a network of host institutions that offer resources and workshop opportunities to pre-service and in-service educators based on OSS missions and facilities, standards-based curriculum materials, and links to other NASA education programs.

Lead: Dr. Nitin Naik, Wheeling Jesuit University, 316 Washington Avenue, Wheeling, WV 26003. E-mail: naik@cet.edu. Phone: 304-243-2388.

Contact: Dr. Laurie Ruberg, Wheeling Jesuit University, 316 Washington Avenue, Wheeling, WV 26003.
 E-mail: lruberg@cet.edu. Phone: 304-243-2480.

URL: <http://www.cet.edu/ossbroker>

Activities: Mars Viewing at Howard University Planetarium [A380]
 Maryland Science Center SpaceLink Teachers' Thursdays [A34]
 Maryland Space Day E/PO [A388]
 NASA Langley Research Center Pre-Service Teacher Institute [A181]
 National Engineering Week [A402]
 National Society of Black Physicists Annual Convention [A72]
 Outreach to Community Planetariums [A40]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 Space Science Education Resource Directory [A124]

Sun-Earth Connections Educator Kit [A125]
 Sun-Earth Day Workshop [A476]
 "To Mars with MER" [A455]
 West Virginia: Mars Watch E/PO Activities [A463]

B18. New England Space Science Initiative in Education Broker/Facilitator† (NESSIE B/F)

Description: Founded in January 2002, NESSIE is the Broker/Facilitator for the New England states of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine. NESSIE is charged with catalyzing and fostering collaborations among space scientists and educators within both the formal and informal education communities. NESSIE itself is a collaboration of scientists and science educators at the Museum of Science in Boston, the Harvard-Smithsonian Center for Astrophysics, and Tufts University. Its primary goals are to (1) broker partnerships among space scientists and educators, (2) facilitate a wide range of educational and public outreach activities, and (3) examine and improve space science education methods. NESSIE's unique strengths reside in its prime location (the Museum of Science), its diverse mix of scientists and educators, and its dedicated board of advisors. NESSIE's role as a clearinghouse and facilitator of space science education is being realized through its interactive Web site and via targeted meetings, workshops, and conferences involving scientists and educators. Special efforts are being made to reach underserved groups by tailoring programs to their particular educational needs and interests. These efforts are building on the experiences of prior and ongoing programs in space science education at the Museum of Science, the Harvard-Smithsonian Center for Astrophysics, Tufts University, and NASA.

Lead: Dr. Cary Sneider, Museum of Science, Education/NESSIE, Boston, MA 02114-1099. E-mail: csneider@mos.org. Phone: 617-589-0227.

Contact: Dr. William Waller, Tufts University, Department of Physics and Astronomy, Medford, MA 02155. E-mail: wwaller@mos.org. Phone: 617-589-0227.

URL: <http://www.mos.org/nessie>

Activities: Astrobiology Guest Speaker Series [A337]
 "Cosmic Questions": Professional Development [A151]
 Current Science and Technology Center [A10]
 "Mysteries of the Milky Way" Planetarium Show [A6]
 NESSIE Outreach at Professional Conferences [A470]
 New England After-School Programs in Space Science [A296]
 New England Space Scientists in the Classroom [A297]
 New England Workshops in Space Science Education [A185]
 Professional Societies of Minority Scientists/OSS Collaboration [A75]
 Public Presentations by New England Space Scientists [A410]
 SEU Forum: Support for Informal Science Education [A418]
 Space Science Education at Public Events in New England [A432]
 Space Science Education in New England Colleges [A137]
 Space Science Education Resource Directory [A124]
 Space Science for the Visually Impaired [A76]
 Space Science Workshops for Educators [A198]
 "Stars of the Pharaohs" Planetarium Show [A8]
 Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Boston, MA [A138]
 Structure and Evolution of the Universe (SEU) Forum and the Urban School Initiative: Cambridge, MA [A139]
 "To Mars with MER" [A455]
 Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach [A141]

B19. Southeast Regional Clearinghouse Broker/Facilitator (SERCH B/F)

Description: SERCH is a NASA Space Science E/PO program with the purpose of promoting space science awareness and enhancing interest in science, math, and technology through the use of OSS mission data, information, and educational products. SERCH works closely with 14 Space Grant consortia (Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Puerto Rico, South Carolina, Tennessee, and Virginia) throughout the southeastern United States. SERCH serves as a Broker/Facilitator of services between the region's educational community and researchers involved in OSS missions. The goals of SERCH are to (1) develop a network of educators and researchers interested in space science, (2) be an effective interface between researchers and educators in the area of space science, (3) be a primary information and resource clearinghouse for space science data, information, and educational prod-

ucts, (4) support OSS mission scientists in their educational outreach activities, (5) facilitate the modification of OSS materials to meet the needs of diverse educational environments, (6) be a leader in serving exceptional students and the general public, (7) enhance minority involvement across NASA OSS programs, and (8) develop an accessible nationwide Geographic Information System (GIS) database that provides spatially related information of targeted NASA educational resources.

Lead: Dr. Cassandra Runyon, College of Charleston, Geology, Charleston, SC 29424. E-mail: cass@cofc.edu. Phone: 843-953-8279.

URL: <http://serch.cofc.edu/serch>

Activities: A Space Science and Astronomy Workshop for Teachers [A142]
Backyard Astronomy [A342]
Enhancement of the Space Science Research Program at South Carolina State University [A48]
"Exceptional Space Science Materials for Exceptional Students" Workshop [A63]
"Exceptional Space Science Materials for Exceptional Students": Follow-up Workshops [A64]
Professional Societies of Minority Scientists/OSS Collaboration [A75]
Space Science Education Resource Directory [A124]
Space Science for the Visually Impaired [A76]
Special Needs Resource Group [A77]
STARLAB Portable Planetarium Regional Loan Program [A317]
Students Acquiring Real Science (STARS) [A320]
Video and Laboratory Curriculum in NASA OSS Themes for DC Public Schools [A238]

B20. Space Science Institute Broker/Facilitator (SSI B/F)

Description: The Space Science Institute (SSI) of Boulder, Colorado is home to one of seven regional Broker/Facilitator (B/F) programs that supports OSS E/PO efforts. The core mission of B/Fs is to cultivate opportunities and partnerships between the education and space science communities that can address important educational needs in their respective regions. The SSI B/F program now serves a large part of the United States, extending from North Dakota to California (Arizona, California, Colorado, Nebraska, North Dakota, New Mexico, Nevada, South Dakota, Utah). SSI is building on four years of "lessons learned" in the B/F role. The goals of our B/F program are to provide strategically valuable support for (1) space scientists' effective E/PO involvement, (2) formal education (emphasizing state-based agendas), (3) informal education (emphasizing planetarium associations, Girl Scouts, and traveling science exhibits), and (4) underserved populations (emphasizing indigenous and Latino educators). This strategic support includes providing professional development opportunities; facilitating access to and use of exemplary materials; and facilitating E/PO participation and/or partnership. Key collaborators of the SSI B/F program include leaders from two western planetarium associations, the Girl Scouts' Mile-Hi Council, mobile education programs, traveling exhibit programs, the MESA after-school programs, and E/PO leads at major scientific research institutions in our region. To begin to address the vastness of our region, we are developing new electronic resources (e-brokering) for both scientists and educators.

Lead: Dr. Cheryl Lynn Morrow, Space Science Institute, 4750 Walnut Street, Boulder, CO 80301. E-mail: camorrow@colorado.edu. Phone: 720-974-5828.

Contact: Ms. Christy Edwards, Space Science Institute, 4750 Walnut Street, Boulder, CO 80301. E-mail: edwardcl@colorado.edu. Phone: 720-974-5824.

URL: <http://ssibroker.colorado.edu/broker>

Activities: Electronic Newsletter: Bulletin for Educators in Space Science (BESS) [A155]
Electronic Newsletter: Regional Opportunities for Scientists in Education [A467]
Girl Scouts of the USA/NASA Collaboration [A65]
Interactive Exhibits at Community Events [A376]
"MarsQuest" Planetarium Show [A5]
"MarsQuest" Traveling Exhibit [A17]
Outreach to Native Americans in the Western Region [A74]
Professional Societies of Minority Scientists/OSS Collaboration [A75]
SEU Forum: Support for Informal Science Education [A418]
Space Science Education Resource Directory [A124]
Space Science Workshops for Educators [A198]
"Space Weather Center" Traveling Exhibit [A19]
Teaching "Kinesthetic Astronomy" [A127]
"To Mars with MER" [A455]
Workshops, Sessions, and Seminars for Scientists on K-14 Education and Public Outreach [A141]

B21. Space Science Network Northwest Broker/Facilitator**S2N2 B/F**

Description: S2N2 uses a variety of approaches to make formal and informal educators aware of NASA Space Science programs, materials and opportunities. S2N2 helps to create sustainable partnerships between formal and informal educators and NASA OSS missions, forums and space scientists. S2N2 operates by having a central office at the University of Washington and representatives in the partner states of Washington, Alaska, Hawaii, Oregon, Montana, Idaho, and Wyoming.

Lead: Dr. Julie Lutz, University of Washington, Seattle, WA 98195. E-mail: nasaerc@u.washington.edu. Phone: 206-543-0214.

Contact: Ms. Nancy Cooper, University of Washington, Box 351310/ESS/S2N2, Seattle, WA 98195.
E-mail: s2n2@u.washington.edu. Phone: 206-543-0214.

URL: <http://www.s2n2.org>

Activities: African American Space Scientists Exhibit [A333]
Astronomy for UW GEAR-UP Students [A243]
Educator Workshops: Space Science Network Northwest [A154]
Girl Scouts of the USA/NASA Collaboration [A65]
Professional Societies of Minority Scientists/OSS Collaboration [A75]
Solstice Celebration [A426]
Space Science Education Resource Directory [A124]
Space Science Network Northwest: Scientist Talks [A435]
Space Spot Shopping Mall Exhibit [A436]
STARLAB Training for Teachers [A202]
Sun-Earth-Moon System Exhibit at University of Wyoming Planetarium [A20]
Towards Other Planetary Systems (TOPS) Astronomy Workshop [A214]
Towards Other Planetary Systems (TOPS): Astronomy Workshop for Marshall Islands and Micronesia Teachers [A215]
Traveling Meteorite Display in Wyoming Libraries [A21]
Wyoming Astronomy Camp [A465]

ASTRONOMICAL SEARCH FOR ORIGINS MISSIONS**Major Missions****B22. Hubble Space Telescope (HST)**

Description: The Office of Public Outreach at the STScI was created to share the amazing discoveries of the Hubble Space Telescope with the American public. We are privileged to be the focal point of public attention for a storied NASA/ESA space science mission to which thousands of engineers, programmers, technicians, administrators and scientists have devoted their professional gifts. We have developed a multitude of products and programs that have capitalized on the intense interest in Hubble to inform and inspire millions of Americans and many others around the globe.

Lead: Dr. Ian Griffin, Space Telescope Science Institute, Office of Public Outreach, 3700 San Martin Drive, Baltimore, MD 21218. E-mail: griffin@stsci.edu. Phone: 410-338-4567.

URL: <http://hubblesite.org>

Activities: Adler After School [A240]
"Amazing Space" Capture the Cosmos [A82]
"Amazing Space" Glossary [A83]
"Amazing Space" Graphic Organizers [A84]
"Amazing Space" Homework Help [A85]
"Amazing Space" Pictures and Facts [A86]
"Amazing Space" Questions and Answers [A87]
"Amazing Space" Science Content Reading [A88]
"Cosmic Questions" Informal Science: Midland Michigan [A353]
Enhancement of the Space Science Research Program at South Carolina State University [A48]
Girl Scouts of the USA/NASA Collaboration [A65]
HST Cycle E/PO Grant: "Accessible Universe: Making Astronomy Accessible in the Regular Elementary Classroom" [A101]

HST Cycle E/PO Grant: Exhibit of HST Images and Space Hardware [A11]
 HST Cycle E/PO Grant: Mapping the Solar Neighborhood [A102]
 HST Cycle E/PO Grant: Mice, Monsters and Other Celestial Beasts—A Space Safari [A2]
 HST Cycle E/PO Grant: “Reach for the Stars” [A165]
 HST Cycle E/PO Grant: Scientific Living [A370]
 HST Cycle Education/Public Outreach Grant: Value-Added Educational Tutorials for HST Data [A227]
 HST Formal Education [A103]
 HST Lithograph [A104]
 HST: “Amazing Space” [A105]
 HST: Astronomy Day 2003 [A371]
 HST: Speaker’s Bureau [A372]
 HST: Workshops and Presentations [A228]
 Hubble Space Telescope: Immersive Dome Visualizations for Planetariums [A25]
 Hubble Space Telescope: International Planetarium Society Slide Service [A26]
 “Hubble Space Telescope: New Views of the Universe” (Version 2) [A12]
 Hubble Space Telescope: Online Broadcast-Quality Hubble Video Clip Library [A27]
 Hubble Space Telescope: “ViewSpace” CD Distribution [A13]
 Hubble Space Telescope: “ViewSpace” Internet Distribution [A14]
 “In Search of . . . Galaxies” [A113]
 Open Night at the Space Telescope Science Institute [A407]
 “Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 The Electromagnetic Spectrum Poster [A128]
 Warped Galaxy Lithograph [A134]

B23. James Webb Space Telescope (JWST)

Description: The JWST E/PO program is led by the Space Telescope Science Institute (STScI). With the launch planned for 2009 or 2010, a modest level of resources are planned until 2006 or 2007. As STScI is also responsible for HST E/PO, we are using the interest in HST to introduce the public to this future mission as the next major leap forward in space discovery. Through the Origins Education Forum, we are keeping abreast of the activities of the Spitzer space Telescope and SOFIA missions to promote public understanding of infrared light and will seek opportunities to partner with them. One new program was initiated in the past year by the University of Arizona Near Infrared Camera (NIRCam) science team to develop astronomy camps specifically designed for Girl Scouts.

Lead: Ms. Peg Stanley, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218.
E-mail: pstanley@stsci.edu. Phone: 410-338-4536.

URL: <http://nextgen.stsci.edu>

Activities: Astronomy Camp for Girl Scout Leaders [A339]
The Electromagnetic Spectrum Poster [A128]

B24. Kepler

Description: The Kepler mission E/PO includes formal education elements: GEMS teacher guides, teacher workshops, “Hands-on Universe” high school activities, KeplerCam CCD cameras for colleges; informal education elements: planetarium shows, museum exhibits, public events; and public outreach: public video program, Stardate radio programs, and amateur astronomer’s kits.

Lead: Alan Gould, Lawrence Hall of Science, Kepler, 1 Centennial Drive, Berkeley, CA 94701. E-mail: agould@uclink.berkeley.edu. Phone: 510-643-5082.

Contact: Edna DeVore, SETI Institute, 2035 Landings Dr., Mountain View, CA 94043.
E-mail: edevore@seti.org. Phone: 650-960-4538.

URL: <http://www.kepler.arc.nasa.gov>

Activities: Classroom Presentations by Kepler Scientists and Engineers [A251]
Internet Initiatives [A378]
Involving Scientists in E/PO [A468]
Kepler Cam: Providing Planet-Finding Hardware and Data Techniques to Minority Colleges and Universities [A67]
SOFIA, SETI, and Kepler Mission Conference Exhibit Booth [A194]
Teacher Workshops on Planet Finding [A207]
The Electromagnetic Spectrum Poster [A128]

B25. Spitzer Space Telescope (SST)

Description: The Spitzer Space Telescope E/PO program strives to address NASA's goals of reaching a wide audience and inspiring the next generation of explorers. Our formal education initiative includes a fully-accredited online course which teachers may take for continuing education credit or as part of a master's degree in science education. We also offer short courses at all National Science Teachers Association (NSTA) meetings and regional state teacher meetings. In the informal education realm, we are developing a series of ViewSpace presentations, which reach over 100 planetariums and science museums. We are also part of a collaboration on a new traveling museum exhibit on the Origins programs which will debut in 2005. This year saw multiple articles and television segments about our launch and successful start-up, and we are addressing the challenge of getting new science and educational materials out to the public as soon as possible.

Lead: Dr. Michelle Thaller, California Institute of Technology, 100-22, 1200 East California Blvd., Pasadena, CA 91125.
E-mail: thaller@ipac.caltech.edu. Phone: 626-395-8670.

URL: <http://sirtf.caltech.edu>

Activities: "Active Astronomy": Classroom Activities for Learning About Infrared Light [A144]
"Beyond the Visible Universe: Teaching Invisible Astronomy" [A145]
Girl Scouts of the USA/NASA Collaboration [A65]
"Science Concepts in Context" [A235]
Spitzer Space Telescope and SOFIA Online Course [A200]
Spitzer Space Telescope "Ask an Astronomer" Videos [A437]
Spitzer Space Telescope Conference Support [A475]
Spitzer Space Telescope Educator Workshops [A201]
Spitzer Space Telescope Webcast, TV, and Radio Presentations [A438]
Spitzer Space Telescope-sponsored Publications [A439]
Spitzer Space Telescope: "Ask an Astronomer" Helpdesk [A440]
Spitzer Space Telescope: Classroom Visits [A314]
Spitzer Space Telescope: Curriculum Materials Distribution [A315]
Spitzer Space Telescope: Large Public Presentations [A441]
Spitzer Space Telescope: Public Exhibits [A442]
Spitzer Space Telescope: Web Activities [A443]
The Electromagnetic Spectrum Poster [A128]

B26. Stratospheric Observatory for Infrared Astronomy (SOFIA)

Description: SOFIA will consist of a specially modified Boeing 747-SP aircraft carrying a 2.5-meter telescope designed to make sensitive infrared measurements of a wide range of astronomical objects. SOFIA will be a premier observatory for infrared and sub-millimeter astronomy for the next two decades. SOFIA's E/PO program contributes to the improvement of America's public scientific, mathematical and technological literacy and greater awareness of the value of scientific research. SOFIA was designed from the beginning with the capability to allow visiting educators and journalists to observe and participate in the research process. SOFIA's E/PO program will bring the excitement, challenges, discoveries, teamwork, and educational value of the observatory's research to teachers, students, and the general public on a national and international scale. SOFIA E/PO programs include: (1) Airborne Astronomy Ambassadors — trained educators who will fly on research missions and comprise a national network of master educators who conduct teacher workshops and public presentations, (2) Education Partners Program — SOFIA scientists, instrument builders, engineers, technicians, flight crew and educators who will partner with teachers in their local communities, (3) Science Literacy and Education Program — symposia at NASA Ames for undergraduate instructors, science and technology center staff, and planetarium directors, and (4) SOFIA Visiting Educators — a small number of experienced educators who will join the SOFIA E/PO staff for 1-year stints as flight facilitators and outreach personnel. The E/PO program will support a public affairs team that works with the NASA Office of Public Affairs to communicate SOFIA science effectively. SOFIA will be operated for NASA and the German space agency DLR by Universities Space Research Association (USRA). The E/PO program is jointly conducted by the SETI Institute, the Astronomical Society of the Pacific (ASP), and members of the USRA SOFIA team.

Lead: Dr. Dana Backman, NASA Ames Research Center, USRA / SOFIA, MS 144-2, Moffett Field, CA 94035-1000.
E-mail: dbackman@mail.arc.nasa.gov. Phone: 650-604-2128.

URL: <http://sofia.arc.nasa.gov>

Activities: "Active Astronomy": Classroom Activities for Learning About Infrared Light [A144]
Aeronautical Exposition for Students [A241]

Air Expo for the Public (Moffett Field Air Show) [A334]
 Ames Research Center: SOFIA Exhibit [A336]
 Astronomy at 41,000 Feet—The Story of SOFIA [A338]
 “Beyond the Visible Universe: Teaching Invisible Astronomy” [A145]
 Electromagnetic Radiation, Astronomy, and SOFIA (for Blind/Visually Impaired Students) [A62]
 Electromagnetic Radiation, Infrared Astronomy, and SOFIA [A200]
 Girl Scouts of the USA/NASA Collaboration [A65]
 “Passport to the Solar System” (PTSS) [A232]
 Project ASTRO: Los Gatos Schools and Los Altos Girl Scouts [A304]
 “Science Concepts in Context” [A235]
 SOFIA, SETI, and Kepler Mission Conference Exhibit Booth [A194]
 SOFIA and HAWC: Yerkes Observatory Tour [A419]
 SOFIA Conference Exhibit and Booth [A472]
 SOFIA E/PO Conference Posters [A473]
 Space Day at San Jose Tech Museum of Innovation [A429]
 Space Science for Amateur Astronomers [A433]
 Space Science for the Visually Impaired [A76]
 The Electromagnetic Spectrum Poster [A128]
 Tours of the Kuiper Airborne Observatory (KAO) Interior [A456]
 Workshops, Sessions, and Seminars for Scientists on K–14 Education and Public Outreach [A141]

Navigator

B27. Navigator Program

Navigator)

Description: Navigator E/PO initiatives fall into three key programmatic areas: formal education, informal education, and public outreach (including Internet and media). Additionally, several crosscutting activities support various components of the plan. All Navigator activities are important to the success of the program, however, two initiatives (the Community College Initiative and the Night Sky Network: Engaging Amateur Astronomy Clubs) stand out as significant new investments for Navigator and may serve as platforms for the participation of other NASA missions in the future.

Lead: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, 301-486, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.

URL: <http://planetquest.jpl.nasa.gov>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]
 Internet Initiatives [A378]
 Navigator Community College Initiative [A183]
 Navigator Educational Workshops and Conference Participation [A184]
 Navigator Program Museum Exhibits and Alliances [A38]
 Navigator Research Experiences for Minorities [A73]
 Navigator Science Events [A403]
 Navigator: Student Support and Classroom Visits [A294]
 PlanetQuest Student Activity Guide [A121]
 Solar System Community Events Program [A423]
 Space Science for Amateur Astronomers [A433]
 The Night Sky Network: Engaging Amateur Astronomy Clubs [A452]

B28. Keck Interferometer

KECK)

Description: The search for planets in other solar systems (extrasolar planets), and the possibility of extraterrestrial life are topics with the potential for engaging the imagination of a large variety of audiences, from a variety of ages, and cultural and educational backgrounds. The E/PO program of the KECK/IOTA (Infrared Optical Telescope Array) team aims at exploiting this interest to promote learning of basic physics, planetary science, and astronomy, and to outreach into underrepresented groups in science and technology. We have an exceptional opportunity to introduce non-scientists, educators, and students to the interdisciplinary practice of science, while they learn about the location of Earth within the Solar System and the privileged position of Earth in it for the onset of life. They discover that although Earth and the Solar System appear to be somewhat unique,

other similar systems may yet be found, and they learn about the ways in which technology has increased our capabilities of searching for planets where life may exist. In addition, KECK participates in the overall Navigator E/PO program.

Lead: Dr. Irene Porro, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, MS19, 60 Garden Street, Cambridge, MA 02138. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

URL: <http://cfa-www.harvard.edu/cfa/oir/IOTA>

Activities: Astrobiology Guest Speaker Series [A337]
 "Cosmic Questions" Informal Science: Midland Michigan [A353]
 Girl Scouts of the USA/NASA Collaboration [A65]
 Internet Initiatives [A378]
 Navigator Community College Initiative [A183]
 Navigator Educational Workshops and Conference Participation [A184]
 Navigator Program Museum Exhibits and Alliances [A38]
 Navigator Science Events [A403]
 Navigator: Student Support and Classroom Visits [A294]
 "Passport to the Solar System" (PTSS) [A232]
 PlanetQuest Student Activity Guide [A121]
 Public Presentations by New England Space Scientists [A410]
 "Science Concepts in Context" [A235]
 The Electromagnetic Spectrum Poster [A128]
 The Night Sky Network: Engaging Amateur Astronomy Clubs [A452]

B29. Large Binocular Telescope Interferometer (LBTI)

Description: LBTI participates in the overall Navigator E/PO program.

Lead: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, 301-486, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.

URL: <http://planetquest.jpl.nasa.gov>

Activities: Internet Initiatives [A378]
 Navigator Educational Workshops and Conference Participation [A184]
 Navigator Science Events [A403]
 Navigator: Student Support and Classroom Visits [A294]
 PlanetQuest Student Activity Guide [A121]

B30. Michelson Science Center (MSC)

Description: MSC is a science operations and analysis service organization for selected NASA Origins theme projects and the scientists and engineers who use them. MSC facilitates the timely and successful execution of Origins theme science by providing software infrastructure, science operations, and consulting to Navigator projects and their user communities. MSC participates in the overall Navigator education and public outreach program.

Lead: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, 301-486, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.

URL: <http://planetquest.jpl.nasa.gov>

Activities: Internet Initiatives [A378]
 Navigator Science Events [A403]
 PlanetQuest Student Activity Guide [A121]

B31. Space Interferometry Mission (SIM)

Description: SIM participates in the overall Navigator E/PO program.

Lead: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, 301-486, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.

URL: <http://planetquest.jpl.nasa.gov>

Activities: "Astro-Venture" [A89]
 Girl Scouts of the USA/NASA Collaboration [A65]
 Internet Initiatives [A378]
 Navigator Community College Initiative [A183]
 Navigator Educational Workshops and Conference Participation [A184]
 Navigator Program Museum Exhibits and Alliances [A38]
 Navigator Science Events [A403]

Navigator: Student Support and Classroom Visits [A294]
 PlanetQuest Student Activity Guide [A121]
 The Electromagnetic Spectrum Poster [A128]
 The Night Sky Network: Engaging Amateur Astronomy Clubs [A452]

B32. Terrestrial Planet Finder (TPF)

Description: TPF participates in the overall Navigator E/PO program.
 Lead: Mr. W. Michael Greene, NASA Jet Propulsion Laboratory, 301-486, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: william.m.greene@jpl.nasa.gov. Phone: 818-354-1277.
 URL: <http://planetquest.jpl.nasa.gov>
 Activities: "Astro-Venture" [A89]
 Girl Scouts of the USA/NASA Collaboration [A65]
 Internet Initiatives [A378]
 Navigator Community College Initiative [A183]
 Navigator Educational Workshops and Conference Participation [A184]
 Navigator Program Museum Exhibits and Alliances [A38]
 Navigator Science Events [A403]
 Navigator: Student Support and Classroom Visits [A294]
 PlanetQuest Student Activity Guide [A121]
 The Electromagnetic Spectrum Poster [A128]
 The Night Sky Network: Engaging Amateur Astronomy Clubs [A452]
 York College Observatory Educational Outreach Program (YC00P) [A58]

Explorers

B33. Far-Ultraviolet Spectroscopic Explorer (FUSE)

Description: FUSE is designed for a very specialized and unique task that is complementary to other NASA missions. FUSE looks at light in the far ultraviolet portion of the electromagnetic spectrum (approximately 90 to 120 nanometers), which is unobservable with other telescopes. FUSE observes these wavelengths with much greater sensitivity and resolving power than instruments previously used to study light in this wavelength range. The FUSE E/PO program has developed educational kits for middle and high school, conducted educator workshops, and provided exhibits for museums.
 Lead: Ms. Luciana Bianchi, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: bianchi@skysrv.pha.jhu.edu. Phone: 410-516-4009.
 URL: <http://fuse.pha.jhu.edu/outreach>
 Activities: The Electromagnetic Spectrum Poster [A128]

Other NASA Programs

B34. NASA Astrobiology Institute, (NAI)

Description: NAI is building a future community of astrobiologists while expanding the public's understanding of the nature and importance of our work. NAI's E/PO program is distributed throughout its Lead Teams. Each Team directs a local effort with specific emphasis on that Team's research and expertise while contributing to larger collaborative projects. These include Web sites, print products, and curriculum supplements, as well as educational programs and activities, internships, presentations, and exhibits. Educating and training the next generation is another important aspect of NAI's mission, essential to ensuring continuity and longevity of the field of astrobiology. Many of our members train new researchers directly in their academic programs and laboratories. While some of these courses and programs are called "astrobiology", many of them reside within traditional astronomy, biology, chemistry, geology, and planetary science departments. In this way, NAI members are growing the field of astrobiology both as an independent discipline and through the expansion of traditional approaches.
 Lead: Ms. Kristina Wilmoth, NASA Astrobiology Institute, Ames Research Center MS 240-1, Moffett Field, CA 94035. E-mail: kwilmoth@mail.arc.nasa.gov.
 Contact: Ms. Daniella Scalice, NASA Astrobiology Institute, Ames Research Center MS 240-1, Moffett Field, CA 94035. E-mail: dscalice@mail.arc.nasa.gov. Phone: 650-604-4024.
 URL: <http://nai.arc.nasa.gov>
 Activities: Astrobiology Microscope Web Site [A220]

Astrobiology: Discovering New Worlds of Life Interactive Poster [A90]
 Astrobiology: The Search for Life in the Universe (Magazine) [A91]
 Enhancement of the Space Science Research Program at South Carolina State University [A48]
 "Fingerprints of Life?": Development of Classroom Activities, Web Site, and CD-ROM [A226]
 Ice in the Solar System Interactive CDROM [A106]
 NASA Ames Astrobiology Institute Lead Team [A36]
 NASA Ames Astrobiology Institute Lead Team/Yellowstone National Park Partnership [A392]
 NASA Astrobiology Institute (NAI) Research Sabbaticals for Minority Institutions [A68]
 NASA Astrobiology Institute (NAI)—Ames Research Center: Microbial Mat Laboratory Tours [A393]
 NASA Astrobiology Institute (NAI)—Ames Research Center: Astrobiology Academy [A285]
 NASA Astrobiology Institute (NAI)—Astrobiology for Teachers: An Online Graduate Course [A178]
 NASA Astrobiology Institute (NAI)—Astrobiology in the Public Eye [A394]
 NASA Astrobiology Institute (NAI)—Carnegie Institution of Washington: Astrobiology Articles in the Spectrum Newsletter [A395]
 NASA Astrobiology Institute (NAI)—Colorado University: Astrobiology Traveling Show [A286]
 NASA Astrobiology Institute (NAI)—Marine Biological Laboratory: Classroom Presentations on Microbial Mats [A287]
 NASA Astrobiology Institute (NAI)—Penn State University: Astrobiology Summer Program (ASP) [A288]
 NASA Astrobiology Institute (NAI)—University of Washington: Center for Astrobiology and Early Evolution Newsletter [A396]
 NASA Astrobiology Institute (NAI)—Video Collection Project [A397]
 NASA Astrobiology Institute (NAI): "Ask an Astrobiologist" [A289]
 NASA Astrobiology Institute (NAI): Astro-Venture [A290]
 NASA Astrobiology Institute (NAI): Involvement with Undergraduate and Graduate Students [A291]
 NASA Astrobiology Institute/Johnson Space Center: Minority and Underrepresented Education and Public Outreach [A69]
 NASA Astrobiology Institute/Penn State University: Women In Science and Engineering Research (WISER) [A70]
 NASA Astrobiology Institute/UCLA: The Licancabur Expedition [A292]
 NASA Astrobiology Institute/University of Washington: Astrobiology on the School Front—Interning and Mentoring [A71]
 NASA Astrobiology Institute: "Cosmic Origins" Traveling Museum Exhibit [A37]
 "Passport to the Solar System" (PTSS) [A232]
 Project AstroBio [A189]
 Resources for Teaching About Life on Earth and Beyond: National Science Teachers Association Short Course [A190]
 "Science Concepts in Context" [A235]
 Solar System Community Events Program [A423]
 Teachers Experience Astrobiology: NASA Astrobiology Institute (NAI) Workshops and Short Courses [A208]
 The Electromagnetic Spectrum Poster [A128]
 "Voyages Through Time": High School Astrobiology Curriculum [A239]

B35. Two Micron All-Sky Survey (2MASS)

Description: The 2MASS project was designed to close the gap between our current technical capability and our knowledge of the near-infrared sky. In addition to providing a context for the interpretation of results obtained at infrared and other wavelengths, 2MASS is providing direct answers to immediate questions on the large-scale structure of the Milky Way and the local Universe. The optimal use of the next generation of infrared space missions, such as the HST Near Infrared Camera and Multi-Object Spectrometer (NICMOS), the Spitzer Space Telescope, and the Next Generation Space Telescope (NGST) as well as powerful ground-based facilities, such as Keck I, Keck II, and Gemini, required a new census with vastly improved sensitivity and astrometric accuracy than was previously available. To achieve these goals, 2MASS uniformly scanned the entire sky in three near-infrared bands to detect and characterize point sources brighter than about 1 mJy in each band, with a signal-to-noise ratio (SNR) greater than 10, using a pixel size of 2.0 arcseconds. This achieved an 80,000-fold improvement in sensitivity, relative to earlier surveys.

URL: <http://www.ipac.caltech.edu/2mass>

Activities: "Passport to the Solar System" (PTSS) [A232]

"Science Concepts in Context" [A235]

York College Observatory Educational Outreach Program (YCOOP) [A58]

SOLAR SYSTEM EXPLORATION MISSIONS

Major Missions

B37. Cassini/Huygens Probe

Description: The Cassini-Huygens E/PO mission is dedicated to bringing the excitement of the Cassini mission and the Saturn system to audiences throughout the nation and abroad. Educational activities, cooperative educator programs, educator conferences, public Web access, media support and releases, museum participation, and the Cassini Speakers' group are just a few of the ways we seek to engage the public in this multi-national exploration program to Saturn. The formal education component focuses on "Reading, Writing, and Rings," an integrated reading and language arts program for grades 1-4. The Saturn Observation Campaign brings amateur astronomers into the Cassini community. Members host star parties where participants view Saturn. The "Ring World" planetarium show is targeted at mid-range planetariums. Ongoing efforts include: Cassini Speakers, Solar System Ambassador support, and the 5-12 formal education program "Saturn In Your Kitchen and Backyard."

Lead: Ms. Alice Wessen, NASA Jet Propulsion Laboratory, 233-201, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Alice.S.Wessen@jpl.nasa.gov. Phone: 818-354-4930.

Contact: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, MS 230-101, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: shannon.mcconnell@jpl.nasa.gov. Phone: 818-393-5815.

URL: <http://saturn.jpl.nasa.gov>

Activities: "Astro-Venture" [A89]
Cassini Sky-Watching Events [A343]
Cassini Talks [A344]
International Planetarium Society Partnership [A28]
"Passport to the Solar System" (PTSS) [A232]
Saturn Observing Campaign [A412]
"Science Concepts in Context" [A235]
Shorefest School Visits [A310]
Solar System Community Events Program [A423]
Space Science Workshops for Educators [A198]

B38. Galileo

Description: The primary focus of the Galileo E/PO program has been to archive our scientific achievements using the Galileo Web site. Support of speakers and Solar System Ambassadors continued until Galileo's end of mission impact of Jupiter in September 2003.

Lead: Ms. Shannon McConnell, NASA Jet Propulsion Laboratory, MS 230-101, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: shannon.mcconnell@jpl.nasa.gov. Phone: 818-393-5815.

URL: <http://jpl.nasa.gov/galileo>

Activities: Far Out Friday [A362]
Galileo Classroom Visits [A259]
Goldstone Apple Valley Radio Telescope (GAVRT) Classroom Implementation and Special Projects [A261]
"Goodbye to Galileo" Coverage [A369]
International Planetarium Society Partnership [A28]
"Science Concepts in Context" [A235]
Shorefest School Visits [A310]

B39. Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead

Description: The JPL SSE Theme Lead coordinates the activities of NASA Jet Propulsion Laboratory's Solar System exploration mission outreach coordinators and specialists in media relations, television production, Internet services, and education (both formal and informal). The lead also coordinates the science data analysis and research activities of the missions.

Lead: Ms. Anita Sohus, NASA Jet Propulsion Laboratory, 233-201, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Anita.M.Sohus@jpl.nasa.gov. Phone: 818-354-6613.

Activities: International Planetarium Society Partnership [A28]
Mars Viewing at Howard University Planetarium [A380]
"MarsQuest" Planetarium Show [A5]

“Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 Solar System Educator Program (SSEP) [A195]
 Space Science Workshops for Educators [A198]
 “To Mars with MER” [A455]

Mars Exploration Program

B40. Mars Public Engagement (Mars E/PO)

Description: Mars exploration will be NASA's signature effort in planetary science over the next two decades. This program, the largest in OSS, will provide regular and frequent voyages to Mars. Such a compelling program deserves forward-looking initiatives to engage the public in Mars exploration, scientific discovery, and technological achievements. These initiatives are covered in a long-term Mars Public Engagement Plan. Just as Mars missions have been organized into a program where each element strategically complements and builds on another, the Mars Public Engagement Plan creates a focused, cohesive, highly leveraged program in its collection of planned activities. Mars public engagement is conducted at the program level, covering missions scheduled for Mars destinations over the next two decades. This organization prevents the need to reinvent the wheel with each mission, allows continuity in programming beyond the official end dates of missions, and provides the ability to develop strong, stable, and common infrastructures with long-term partners. The benefit of a 20-year plan is that public engagement initiatives will have time to bear fruit. Also, the contributions and discoveries of each mission can be intimately linked to the rich and compelling science and technology goals of the Mars Exploration Program for greater public understanding of what NASA seeks to achieve in its systematic exploration of Mars. (The term “public engagement” includes all formal education, informal education, and public information and outreach activities.) (Missions include Mariner 3-4, 6-7, and 8-9; Viking 1 and 2; Mars Pathfinder; Mars Global Surveyor; Mars Odyssey; Mars Exploration Rovers; U.S. participation in Mars Express; Mars Reconnaissance Orbiter; and Mars Science Laboratory, as well as coordination with Mars Netlander, Mars Scout, and other Mars areas that receive their E/PO funding from other sources.)

URL: <http://mars.jpl.nasa.gov>

Activities: 4-H Youth Development Program: NASA OSS E/PO Collaboration [A330]
 Girl Scouts of the USA/NASA Collaboration [A65]
 “Imagine Mars!” [A271]
 International Planetarium Society Partnership [A28]
 Mars Exploration Student Data Team [A278]
 Mars Robotics Education Partnership [A279]
 Mars Student Imaging Project [A280]
 Mars Student Workshops [A281]
 Mars Viewing at Howard University Planetarium [A380]
 Mars: Documentary Interviews [A382]
 Mars: Formal Educator Field Trips [A175]
 Mars: Formal Educator Workshops [A176]
 Mars: Informal Educator Workshops [A30]
 Mars: Museum Visualization Alliance [A31]
 Mars: Public Talks [A383]
 Mars: Public Tours [A384]
 Mars: Web Site Science, Engineering, and Educational Content Development [A385]
 Mars: Web Spotlights [A386]
 Mars: Zipcode Mars [A387]
 Mars: Classroom Visits [A282]
 Mars: Models and Exhibits [A32]
 Mars: Museum and Other Informal Education Lectures [A33]
 “MarsQuest” Planetarium Show [A5]
 “MarsQuest” Traveling Exhibit [A17]
 Maryland Space Day E/PO [A388]
 National Engineering Week [A402]
 “Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 Solar System Community Events Program [A423]

Space Science Workshops for Educators [A198]
 "To Mars with MER" [A455]
 West Virginia: Mars Watch E/PO Activities [A463]

B41. 2001 Mars Odyssey

Description: The 2001 Mars Odyssey orbiter is mapping the mineralogy and morphology of the Martian surface. It is achieving global mapping of the elemental composition of the surface and the abundance of hydrogen in the shallow subsurface. (The 2001 Mars Odyssey was launched on April 7, 2001 and arrived at Mars on October 24, 2001.)

Lead: Ms. Christine Johnson, NASA Jet Propulsion Laboratory, MS 264-255, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Christine.Johnson@jpl.nasa.gov. Phone: 818-393-2634.

URL: <http://mars.jpl.nasa.gov/odyssey>

Activities: "Astro-Venture" [A89]
 "EventScope" [A98]
 Girl Scouts of the USA/NASA Collaboration [A65]
 International Planetarium Society Partnership [A28]
 Mars Image Analysis Activity [A116]
 "Marsbound!" Mission to the Red Planet [A117]
 "MarsQuest" Traveling Exhibit [A17]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A235]
 Space Science Workshops for Educators [A198]
 "To Mars with MER" [A455]

B42. Mars Exploration Rover Mission (MER)

Description: Two powerful new Mars rovers were sent on their way to the red planet. MER-A ("Spirit") was launched on June 10, 2003 and MER-B ("Opportunity") launched on July 7, 2003. MER-A landed on January 3, 2004 and MER-B on January 24, 2004. With far greater mobility than the 1997 Mars Pathfinder rover, these robotic explorers will be able to trek up to 100 meters (about 110 yards) across the surface each Martian day. Each rover will carry a sophisticated set of instruments that will allow it to search for evidence of liquid water that may have been present in the planet's past. The rovers are identical to each other but will land at different regions of Mars.

Lead: Ms. Michelle Viotti, NASA Jet Propulsion Laboratory, MS 301-345, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: mviotti@pop.jpl.nasa.gov. Phone: 818-354-8774.

URL: <http://mars.jpl.nasa.gov/classroom>

Activities: "EventScope" [A98]
 Girl Scouts of the USA/NASA Collaboration [A65]
 Goldstone Apple Valley Radio Telescope (GAVRT) Classroom Implementation and Special Projects [A161]
 International Planetarium Society Partnership [A28]
 Mars Viewing at Howard University Planetarium [A380]
 "Marsbound!" Mission to the Red Planet [A117]
 "MarsQuest" Traveling Exhibit [A17]
 MER Launch Coverage [A389]
 Observing Events/MER Updates [A406]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A235]
 Shorefest School Visits [A310]
 "To Mars with MER" [A455]
 "To Mars with MER"—Brokered Partnership Programs [A80]

B43. Mars Global Surveyor (MGS)

Description: The MGS is returning an unprecedented amount of data regarding the Martian surface features, atmosphere, and magnetic properties. Scientists are using the data gathered from this mission both to learn about the Earth by comparing it to Mars and to build a comprehensive data set to aid in planning future missions. (The MGS was launched on November 7, 1996.)

URL: <http://mars.jpl.nasa.gov/mgs>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]

Mars Viewing at Howard University Planetarium [A380]
 “MarsQuest” Traveling Exhibit [A17]
 “Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 “To Mars with MER” [A455]

B44. Mars Pathfinder

Description: Mars Pathfinder launched December 2, 1996 and arrived on the surface of Mars on July 4, 1997. The mission was an engineering demonstration of key technologies and concepts for use in future missions to Mars; it also delivered science instruments to the surface of Mars to investigate the structure of the Martian atmosphere, surface meteorology, surface geology, form and structure, and the elemental composition of Martian rocks and soil. A small, 10-kilogram (22-pound) rover was carried on the Pathfinder and became the first rover ever to explore the Martian surface. The last communication from the spacecraft was received on September 27, 1997, and it was officially declared dead on March 10, 1998.

URL: <http://mpfwww.jpl.nasa.gov/default.html>

Activities: Mars Viewing at Howard University Planetarium [A380]
 “Passport to the Solar System” (PTSS) [A232]
 “Science Concepts in Context” [A235]
 “To Mars with MER” [A455]

B45. Mars Reconnaissance Orbiter (MRO)

Description: MRO will focus on analyzing the surface at new scales in an effort to follow tantalizing hints of water detected in images from the Mars Global Surveyor spacecraft and to bridge the gap

between surface observations and measurements from orbit. For example the Reconnaissance Orbiter will measure thousands of Martian landscapes at 20- to 30-centimeter (8- to 12-inch) resolution, good enough to observe rocks the size of beach balls.

URL: <http://mars.jpl.nasa.gov/missions/future/2005-plus.html>

Activities: Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) Teacher Support [A149]
 Compact Reconnaissance Imaging Spectrometer for Mars (CRISM): Student Support [A252]
 Mars Viewing at Howard University Planetarium [A380]
 New Horizons Public Outreach [A404]
 New Horizons Student Support [A298]
 “Passport to the Solar System” (PTSS) [A232]
 “To Mars with MER” [A455]

B46. Mars Science Laboratory (MSL)

Description: MSL is a roving long-range, long-duration science laboratory that will be a major leap in surface measurements and pave the way for a future sample return mission. NASA is studying options to launch this mobile science laboratory mission as early as 2007. This capability will also demonstrate the technology for “smart landers” with accurate landing and hazard avoidance to reach what may be very promising but difficult to reach scientific sites.

URL: <http://solarsystem.nasa.gov/missions/profile.cfm?Sort=Chron&Mission=MarsSciLab>

Activities: Mars Viewing at Howard University Planetarium [A380]
 Maryland Space Day E/PO [A388]
 “Passport to the Solar System” (PTSS) [A232]
 “To Mars with MER” [A455]
 West Virginia: Mars Watch E/PO Activities [A463]

B47. Viking

Description: NASA's Viking project found a place in history when it became the first mission to land a spacecraft safely on the surface of another planet. Two identical spacecraft, each consisting of a lander and an orbiter, were built. Each orbiter-lander pair flew together and entered Mars orbit; the landers then separated and descended to the planet's surface. The Viking 1 lander touched down on the western slope of Chryse Planitia (the Plains of Gold), while the Viking 2 lander settled down at Utopia Planitia. Besides taking photographs and collecting other science data on the Martian surface, the two landers conducted three biology experiments designed to look for possible signs of life. These experiments discovered unexpected and enigmatic chemical activity in

the Martian soil, but these provided no clear evidence for the presence of living microorganisms in the soil near the landing sites. According to scientists, Mars is self-sterilizing. They believe the combination of solar ultraviolet radiation that saturates the surface, the extreme dryness of the soil, and the oxidizing nature of the soil chemistry prevent the formation of living organisms in Martian soil. The Viking mission was planned to continue for 90 days after landing. Each orbiter and lander operated far beyond its design lifetime. Viking Orbiter 1 functioned until July 25, 1978, while Viking Orbiter 2 continued for 4 years and 1,489 orbits of Mars, concluding its mission on August 7, 1980. Because of the variations in available sunlight, both landers were powered by radioisotope thermoelectric generators—devices that create electricity from heat given off by the natural decay of plutonium. That power source allowed long-term science investigations that otherwise would not have been possible. The last data from Viking 2 Lander arrived at Earth on April 11, 1980. Viking 1 Lander made its final transmission to Earth on November 11, 1982.

URL: <http://www.jpl.nasa.gov/missions/past/viking.html>

Activities: "Passport to the Solar System" (PTSS) [A232]

"Science Concepts in Context" [A235]

"To Mars with MER" [A455]

New Frontiers

B48. New Horizons

Description: New Horizons is a mission to the unexplored edge of our Solar System, designed to provide the first close look at Pluto, Charon and their icy, rocky relatives in the Kuiper Belt. Scheduled to launch in 2006 and reach Pluto-Charon by 2015, New Horizons will be the first NASA planetary spacecraft in two decades to train its instruments on a "new" world. The New Horizons payload is designed to answer critical questions about Pluto, Charon, and the other unexplored bodies in the outer Solar System, such as how the bodies look, what they are made of, and what their atmospheres are like. The mission plans to map surface appearance with visible-wavelength cameras; study surface composition by spectra in the near infrared; and probe atmospheres in detail with ultraviolet spectrometers and radio waves. The New Horizons E/PO plan includes educator training, education programs and curriculum modules, a mission Web site, broadcast events, student press conferences and a guest observer program. Public awareness efforts include co-sponsored lectures, informal programs, and exhibits at science museums nationwide. The E/PO program also includes the Student Dust Counter, a special instrument designed by students at the University of Colorado at Boulder. The device, which will detect dust grains produced by collisions between asteroids, comets and Kuiper Belt objects during New Horizons' journey, will be the first science instrument on a NASA planetary mission to be designed, built, and flown by students.

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

Contact: Linda Butler, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099.

URL: <http://www.pluto.jhuapl.edu>

Activities: New Horizons Public Outreach [A404]

New Horizons Student Support [A298]

Discovery

B49. Discovery Program Support Office (DPSO)

Description: NASA's Discovery program is comprised of a series of highly focused, competitively selected planetary science investigations. Discovery missions aim to enhance our understanding of the Solar System by exploring the planets, their moons, and other small bodies using innovative approaches to assure the highest science value for the cost. Ten missions have been selected since the program began in 1992. Discovery program E/PO efforts are designed to promote the program and awareness of the missions. This is done through a Web site, a quarterly newsletter, the development of outreach products and informational materials, and giving presentations in a variety of venues. The Discovery program works with Discovery mission E/PO personnel to identify and develop E/PO opportunities, coordinate with the program, and assure that mission activities are consistent with NASA Space Science E/PO strategy.

Lead: Ms. Shari Asplund, NASA Jet Propulsion Laboratory, 180-201, 4800 Oak Grove Drive, Pasadena, CA 91109.

E-mail: shari.e.asplund@jpl.nasa.gov. Phone: 818-354-7280.

URL: <http://discovery.nasa.gov>

Activities: Debut of Discovery Program Video, "Unlocking the Mysteries" [A355]
Shorefest School Visits [A310]

B50. Comet Nucleus Tour (CONTOUR)

Description: The E/PO efforts of the CONTOUR mission have been aimed at bringing the thrill of exploration and the wonder of discovery into classrooms and homes through unique educational experiences. We invite teachers, students, and the public to participate in scientific inquiry, discovery, and insight into the complex and awesome nature of comets. Through media, the Internet, and classroom curriculum we reach out to the educational community and the public to inspire their curiosity and satisfy their interests in the study of comets. Although the CONTOUR spacecraft was lost, information on the mission science, education, and outreach continues to be made available.

Contact: Ms. Kathy May, Cornell University, Ithaca, NY 14853. E-mail: kathym@astrosun.astro.cornell.edu.
Phone: 607-255-8542.

URL: <http://www.contour2002.org>

Activities: "Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]

B51. Deep Impact

Description: The Deep Impact mission outreach plan specializes in five audiences: educators, students, public (including informal), the underserved, and amateur astronomers.

Contact: Ms. Maura Rountree-Brown, NASA Jet Propulsion Laboratory, 264-850, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Maura.Rountree-Brown@jpl.nasa.gov. Phone: 818-393-4897.

URL: <http://deepimpact.jpl.nasa.gov>

Activities: 4-H Youth Development Program: NASA OSS E/PO Collaboration [A330]
Deep Impact Web Site [A356]
Deep Impact: Amateur Astronomers Partnership [A357]
Deep Impact: Educator Training [A152]
Deep Impact: Public/Informal Events [A358]
Deep Space Network Minority Outreach [A61]
Girl Scouts of the USA/NASA Collaboration [A65]
High-Power Activity [A99]
Solar System Community Events Program [A423]
Towards Other Planetary Systems (TOPS) Astronomy Workshop [A214]

B52. Genesis

Description: Genesis is a sample recovery mission designed to provide the data needed to achieve a better understanding of the original building blocks of the Solar System. The mission captures pieces of the Sun (ion by ion) in ultra-pure materials. The captured sample will be returned to Earth in an airtight capsule, which will float toward the surface of the Earth via a parafoil. At an approximate altitude of 8,000-10,000 feet the parafoil will be captured using a special technique with helicopters. These samples will be opened at the "cleanest" clean room at NASA's Johnson Space Center. A small portion of the sample will be analyzed there in new state of the art facilities being built as part of the project. The remainder will be held and distributed over the remainder of the century to laboratories capable of making similar measurements. Genesis E/PO is also operated in a unique manner. The project has contracted with a Department of Education (DOE) Laboratory and McREL (Mid-Continent Research in Education and Learning). McREL, sited in Aurora Colorado has a lead role in DOE in learning and standards based education. So far, over the course of our Mission, McREL has produced over 10 large educational modules (each composed of approximately 50-100 pages) of standards-based, field-tested materials. McREL has also designed and implemented an award winning Web site for the mission. Each month this page receives in excess of one million hits, relating to over 45,000 visits, primarily by educators.

Lead: Mr. Aimee Whalen, NASA Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: aimee.whelen@jpl.nasa.gov. Phone: 818-354-3245.

URL: <http://genesismission.jpl.nasa.gov>

Activities: Genesis Classroom/Student Presentations [A260]
Genesis Conference Workshops [A159]
Genesis: Education Events/Exhibits [A364]
"Passport to the Solar System" (PTSS) [A232]
Professional/Academic Presentations [A409]

B53. Lunar Prospector

Description: The Lunar Prospector (LP) was launched in January 1998 to study the Earth's moon. The Lunar Prospector critical science objectives were to "prospect" the lunar crust and atmosphere for potential resources, including minerals, water ice and certain gases; map the Moon's gravitational and magnetic fields; and learn more about the size and content of the Moon's core. In July 1999, the Lunar Prospector impacted the Moon near its south pole in a controlled crash to look for evidence of water ice (none was observed).

URL: <http://nssdc.gsfc.nasa.gov/planetary/lunarprosp.html>

Activities: "Astro-Venture" [A89]

B54. Mercury Surface, Space Environment, Geochemistry, and Ranging**MESSENGER)**

Description: MESSENGER is a scientific investigation of the planet Mercury. Understanding Mercury and the forces that have shaped it is fundamental to understanding the terrestrial planets and their evolution. MESSENGER is a mission to orbit Mercury following two fly-bys of that planet. MESSENGER will investigate key scientific questions regarding Mercury's characteristics and environment during these two complementary mission phases. Data will be provided by an optimized set of miniaturized space instruments and the spacecraft's telecommunications system. MESSENGER will enter Mercury's orbit in April 2009 and carry out comprehensive measurements for one year. Data collection will conclude in April 2010. Working in close coordination with the mission's science team, a carefully selected group of E/PO professionals has been designing a comprehensive set of activities to coordinate with MESSENGER events. The activities are designed for K-college education and public interest. These activities include teacher training, curriculum development, unique student investigations and experiments related to MESSENGER, a television documentary, museum displays, and special outreach to underserved and minority students. The full multi-faceted E/PO program is carried out with an extensive network of individual and institutional partners throughout the country. The E/PO effort is organized around overarching themes that reflect the science, engineering, technology, and people of the mission. The MESSENGER themes are Comparative Planetology, The Solar System through History, and Framing Pathways to Answers: The Scientific Process in Action. The thematic framework is also informed by both content and pedagogy standards articulated in the National Science Education Standards and Benchmarks for Science Literacy. For the duration of the mission, the E/PO team will create and disseminate materials that focus on telling MESSENGER's many stories to a broad and diverse audience.

Lead: Ms. Stephanie Stockman, Science Systems and Applications, Inc., NASA GSFC Code 921, Greenbelt, MD 20771, 5900 Princess Garden Parkway, Suite 300, Lanham, MD 20706.
E-mail: stockman@core2.gsfc.nasa.gov. Phone: 301-614-6457.

URL: <http://messenger.jhuapl.edu>

Activities: Ice in the Solar System Interactive CDROM [A106]
MESSENGER Education Module, "Staying Cool" [A118]
New Horizons Public Outreach [A404]
New Horizons Student Support [A298]
"Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]
TIMED Student Support [A324]

B55. Near-Earth Asteroid Rendezvous (NEAR)

Description: As the first spacecraft to orbit and land on an asteroid, the NEAR mission continues to answer fundamental questions about the nature and origin of near-Earth objects. These objects are the primary source of large bodies that collide with Earth, and primitive asteroids, comets, and meteorites also preserve clues to the nature of early Solar System processes and conditions. These clues have been altered or destroyed on large, planet-size bodies by processes of planetary evolution. (NEAR was launched in February 1996; asteroid landing and final communication occurred in February 2001.)

Lead: Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.

URL: <http://near.jhuapl.edu>

Activities: Adler After School [A240]
NEAR Student Support [A295]
New Horizons Public Outreach [A404]
New Horizons Student Support [A298]

"Passport to the Solar System" (PTSS) [A232]

"Science Concepts in Context" [A235]

B56. Stardust

Description: The Stardust education Web site is designed to enhance the breadth, flexibility and knowledge of science, mathematics, and technology between K–12 education and higher education, recognizing and supporting a diverse set of programs while improving scientific literacy among students. The materials found on this home-page are aligned with the National Science Education Standards and have been designed primarily for use by grades 5–8. The Stardust E/PO team is composed of many partners which include the Challenger Center for Space Science Education, the JASON Foundation for Education, Omniplex at the Kirkpartick Science and Air Space Museum, Space Explorers, Inc., Virginia Space Grant Consortium, Parents and Children as Co-Travelers (PACCT), the NASA's Jet Propulsion Laboratory (JPL) Ambassadors Program, the JPL Solar System Educator Program, the "From the Sun to the Star Nations" Native American outreach initiative, and Space Place. The Stardust mission participates and sponsors teacher training and curriculum development programs targeted for minorities and underserved communities along with the public at large. Other resources available include an interactive Web site, an educational planetarium program, video animation, and library and museum exhibits.

Lead: Ms. Aimee Whalen, NASA Jet Propulsion Laboratory, MS: 264-379, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: aimee.l.whelen@jpl.nasa.gov. Phone: 818-354-3245.

URL: <http://stardust.jpl.nasa.gov>

Activities: Deep Space Network Minority Outreach [A61]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A235]
 Solar System Community Events Program [A423]
 Stardust Formal Education [A316]
 Stardust Informal Outreach [A42]
 Stardust Public Outreach [A444]
 Stardust Target Groups [A445]

Other NASA Programs

B57. Astromaterials Program

Description: The Astromaterials program at NASA's Johnson Space Center curates and distributes samples of other bodies in the Solar System to researchers around the world. Astromaterials include samples collected by NASA missions (e.g., Apollo Moon rocks, Genesis solar wind ions, Stardust comet particles) and samples collected on Earth (e.g., meteorites from Antarctica, cosmic dust from the stratosphere). Astromaterials E/PO focuses on the scientific study of extraterrestrial materials and their use in education. The program is based on collaboration between scientists at Johnson and educators. A long-term example is the distribution of lunar and meteorite samples to schools through partnerships with the NASA Office of Education. Recent major projects include: (1) development of classroom activities in partnership with K–12 teachers, and presentation of the activities in teacher workshops; (2) collaboration with two minority universities on a Houston-wide outreach program; and (3) development of exhibits and planetarium shows in partnership with museums.

Lead: Dr. Marilyn Lindstrom, NASA Johnson Space Center, SR, 2101 NASA Road 1, Houston, TX 77058. E-mail: marilyn.lindstrom-1@nasa.gov. Phone: 281-483-5135.

URL: <http://curator.jsc.nasa.gov>

Activities: 4-H Youth Development Program: NASA OSS E/PO Collaboration [A330]
 Astromaterials Sample Distribution [A221]
 Astromaterials-Astrobiology Student Presentations [A242]
 "Exploring the Solar System": Teacher Workshops [A158]
 Girl Scouts of the USA/NASA Collaboration [A65]
 NASA Astrobiology Institute/Johnson Space Center: Minority and Underrepresented E/PO [A69]
 NASA Johnson Space Center Curation Facility Tours for Educators [A180]
 "Rocks from Space": Teacher Workshops [A192]
 Solar System Community Events Program [A423]

B58. Deep Space 1 (New Millennium) (DS1)

Description: The Space Place has involved DS1 in the following events/activities: we attend conferences to promote Space

Place and all of the projects involved with the Web site. Usually, mission or Space Place related items are passed out. Libraries, science museums, planetariums, zoos and aquariums across the nation have formed "Club Space Place" partnerships with NASA. They get Space Place-provided display materials, an activity guide and handouts for an original group activity. Through these partnerships, we promote the Space Place Web site and NASA Jet Propulsion Laboratory missions. Club Space Place provides quarterly interdisciplinary hands-on activities that are space or Earth science related. These quarterly activities go to the Space Place library and museum partners, Boys & Girls Clubs of America, the YWCA, and the Civil Air Patrol. Presently there are 272 partners reaching thousands of children. On a monthly basis, Space Place provides articles for over 20 newspapers nationwide in both English and Spanish. The combined readership for these newspapers totals more than 2.5 million. The articles end with information on activities and a link to the Space Place Web site and NASA mission Web sites. Diane Fisher submits articles to "Technology and Children" magazine four times a year, and to "The Technology Teacher" magazine eight times a year. Each article, published under the Space Place insignia, refers to a particular mission. "Technology and Children" reaches an estimated 1,400 teachers and their students (up to 42,000 children), and "The Technology Teacher" reaches an estimated 8,000 teachers and their students (up to 224,000 children). Each article is also posted on ITEA's Web site, which reaches an even wider audience. The Space Place Web site is a dynamic site that offers interactive experiences and fun facts for children and adults. Space Place is supported by the New Millennium program. The reaches an average of 3,000 Web users a day.

Lead: Ms. Nancy Leon, NASA Jet Propulsion Laboratory, M/S 171-350, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Nancy.J.Leon@jpl.nasa.gov. Phone: 818-354-1067.

URL: <http://spaceplace.nasa.gov>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]
"Science Concepts in Context" [A235]

B59. Deep Space Mission System (DSMS)

Description: The DSMS incorporates the Deep Space Network (DSN) and the infrastructure, software, and systems which support it. The goal of the DSMS E/PO is to build awareness of the critical role communication plays in Solar System exploration. Without a means of communicating between spacecraft and Earth to relay commands and return science data, there could be no exploration. Frequent collaborations with NASA Jet Propulsion Laboratory (JPL) missions using the DSMS tell this story, while previously produced printed materials and videos are distributed to educators and to the public to offer further explanation. DSMS partners with JPL programs (Solar System Ambassadors, Solar System Educators, and a Native American initiative) to provide wider distribution of information and educational activities. The DSN is also used for science observation through radio astronomy, and one of the decommissioned 34-meter antennas is now part of an innovative educational program, the Goldstone Apple Valley Radio Telescope (GAVRT). Students can control this huge antenna via the Internet from their classrooms to gather and analyze data which is ultimately used by scientists at JPL.

Lead: Ms. Shirley Wolff, NASA Jet Propulsion Laboratory, 303-401, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: shirley.e.wolff@jpl.nasa.gov. Phone: 818-354-4069.

URL: <http://deepspace.jpl.nasa.gov/dsn>

Activities: "Capturing Whispers From Space" [A93]
Deep Space Network (DSN) Educational Activities [A253]
Deep Space Network Conference Workshops and Exhibits [A153]
Deep Space Network Minority Outreach [A61]
Deep Space Network Public Events [A359]
Girl Scouts of the USA/NASA Collaboration [A65]
Goldstone Apple Valley Radio Telescope (GAVRT) Classroom Implementation and Special Projects [A261]
Goldstone Apple Valley Radio Telescope (GAVRT)—Classroom Implementation [A262]
Goldstone Apple Valley Radio Telescope (GAVRT)—Scientist Telecons [A263]
Goldstone Apple Valley Radio Telescope (GAVRT): Educational Conference Workshops and Exhibits [A161]
Goldstone Apple Valley Radio Telescope (GAVRT): Scientist School Visits [A264]
Goldstone Apple Valley Radio Telescope (GAVRT): Teacher Training [A162]
Goldstone Apple Valley Radio Telescope: Public Outreach Activities [A366]
Goldstone Communications Complex: Educational Activities [A265]
Goldstone Communications Complex: Public Tours [A367]
Goldstone Communications Complex: Student Tours [A266]
Goldstone Deep Space Communications Complex: Public Outreach [A368]
International Planetarium Society Partnership [A28]

B60. Jupiter Icy Moons Orbiter (JIMO)

Description: The Jupiter Icy Moons Orbiter is an ambitious proposed mission to orbit three planet-sized moons of Jupiter—Callisto, Ganymede and Europa—which may harbor vast oceans beneath their icy surfaces. The mission would launch in 2012 or later.

URL: <http://www.jpl.nasa.gov/jimo>

Activities: “Astro-Venture” [A89]

B61. Lunar and Planetary Institute (LPI)

Description: The Lunar and Planetary Institute (LPI) provides a bridge between NASA’s Solar System scientific missions and the academic community. Through the Institute, visiting and staff scientists participate in studies of the current state, evolution, and formation of our Solar System. Resources at the LPI include a computing center, library, collections of lunar and planetary data, an image-processing facility, and publishing and conference services. The E/PO department focuses on providing access to current discoveries and knowledge about our Solar System through a variety of programs for the formal and informal education realms. Examples include programs designed to bring space science activities and resources into public and school library settings; planetarium programs exploring space science through Native American legends; educator workshops sharing current Solar System research; hands-on classroom activities developed in collaboration with staff scientists; and public outreach events geared toward young children, families, and older students/adults.

Lead: Dr. Stephanie Shipp, Lunar and Planetary Institute, 3600 Bay Area Boulevard, Houston, TX 77058-1113. E-mail: shipp@lpi.usra.edu. Phone: 281-486-2109.

URL: <http://www.lpi.usra.edu>

Activities: “Explore! Fun with Science” [A361]

Exploring the Solar System: Ryder Program [A256]

Mars Viewing Event [A381]

SkyTellers [A41]

“The Great Desert”: Geology and Life on Mars and in the Southwest [A211]

International Missions with NASA Participation

B63. Mars Express

Description: NASA is participating in a mission planned by the European Space Agency and the Italian Space Agency called Mars Express, which will explore the atmosphere and surface of Mars from polar orbit. NASA’s involvement includes joint development of the radar instrument with the Italian Space Agency, support of U.S. science co-investigators, coordination of radio relay systems to make sure that different spacecraft will operate with each other, a hardware contribution to the energetic neutral atoms analyzer instrument, and the provision of backup tracking support during critical mission phases by NASA’s Deep Space Network. Our contribution to the energetic neutral atoms analyzer instrument is called ASPERA-3. ASPERA-3 was selected as a Discovery mission of opportunity; the complete instrument will study the interaction between the solar wind and the atmosphere of Mars, and it will attempt to determine what happened to the large amount of water that was once on Mars. The co-investigator being funded by NASA is Dr. David Winningham of the Southwest Research Institute, San Antonio, TX.

Activities: Mars Viewing at Howard University Planetarium [A380]

“MarsQuest” Traveling Exhibit [A5]

“Passport to the Solar System” (PTSS) [A232]

“Science Concepts in Context” [A235]

“To Mars with MER” [A455]

B64. Rosetta

Description: Rosetta is a European Space Agency cometary mission. The satellite will rendezvous with a comet and orbit it, while taking scientific measurements. A Surface Science Package (SSP) will be landed on the comet surface to take in situ measurements. The United States is providing science instruments for the orbiter.

Activities: “Science Concepts in Context” [A235]

STRUCTURE AND EVOLUTION OF THE UNIVERSE MISSIONS

Major Missions

B65. Chandra X-Ray Observatory (CXO)

Description: The Chandra X-Ray Observatory, the third of NASA's "Great Observatories," has completed its fourth year of science operations. Chandra's superb resolution has enabled never-before-seen images of the X-ray emission from such fascinating cosmic sources as the sound waves produced by a black hole, a pair of black holes orbiting in the nucleus of an active galaxy, and the jets and rings of high energy particles in the remnants of exploded stars. The goals of the Chandra E/PO program are to increase the public's engagement with NASA space science by conveying the excitement of the Chandra discoveries; promoting science literacy by engaging the imaginations of students, educators, and the public; increasing learning opportunities in science, math and technology with classroom-ready materials that are aligned with national standards; and providing ready access to Chandra images and education products. The program maintains an extensive public Web site with images, background materials, and education products that are downloadable in multiple formats. The Web site is now fully compliant with Federal Section 508 guidelines for visual impairments. Online forms allow educators to order printed and multimedia resources. Opportunities for educators include summer workshops at Tufts University's Wright Center for Science Education, the Rutgers Astrophysics Summer Institute, programs at national and state teachers' conferences, and the Chandra Teacher Resource Agent Program. Printed materials and a CD, containing Chandra images, are distributed widely to classrooms, planetariums, and amateur astronomy associations. Classroom ready materials are downloadable from the E/PO web site. For greater educational impact, an effort is made to present Chandra images in multi-wavelength comparisons. A software program tailored for educational use enables students and teachers to work with actual Chandra data and images.

Lead: Ms. Kathleen Lestition, Harvard-Smithsonian Center for Astrophysics, MS 06, 60 Garden Street, Cambridge, MA 02138. E-mail: klestition@cfa.harvard.edu. Phone: 617-495-7399.

URL: <http://chandra.harvard.edu>

Activities: A Star in Our Neighborhood [A331]
 Adler After School [A240]
 "Bright Lights, Big City": Massive Galaxies and Supermassive Black Holes [A147]
 Chandra Multi-Wavelength Postcards [A94]
 Chandra Student Research at the Pisgah Astronomical Research Institute (PARI) Observatory [A247]
 Chandra X-Ray Center Operation Control Center Tours [A345]
 Chandra X-Ray Center Presentations and Workshops for Students [A248]
 Chandra X-Ray Center Teacher Workshops and Presentations [A148]
 Chandra X-Ray Center: Online Education and Outreach [A346]
 Chandra X-Ray Center: Public Outreach [A347]
 Chandra-Science After-School Initiative [A249]
 "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]
 "Cosmic Questions" Informal Science: Midland Michigan [A353]
 "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
 MIT Center for Space Research Informal Education [A283]
 MIT Center for Space Research Public Outreach [A390]
 MIT Chandra/Gear Up Summer Program [A284]
 "Passport to the Solar System" (PTSS) [A232]
 Penn State Inservice Workshops in Astronomy [A188]
 Public Presentations by New England Space Scientists [A410]
 "Science Concepts in Context" [A235]
 SEU Forum: Mission Support [A417]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
 "The Cosmos is the Classroom" [A210]

B66. Compton Gamma-Ray Observatory (CGRO)

Description: CGRO, the second of NASA's "Great Observatories," was launched in April 1991. It had a diverse scientific agenda, including studies of very energetic celestial phenomena such as solar flares, cosmic gamma-ray bursts, pulsars, nova and supernova explosions, accreting black holes of stellar dimensions, quasar emissions,

and interactions of cosmic rays with the interstellar medium. Compton left a legacy of outstanding science and revolutionized our knowledge of the gamma-ray sky. Its mission ended in June 2000, when it was de-orbited following the failure of one of its three gyroscopes.

Activities: "Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]

B67. Constellation-X

Description: Constellation-X has been designed to perform x-ray spectroscopy with unprecedented sensitivity and spectral resolution. The measurement of large numbers of x-ray spectral lines in hot plasmas leads to determining the elemental composition, temperature, and velocity of the emitting matter. Astronomers will determine the flow of gas in accretion disks around black holes in active galactic nuclei and in binary x-ray sources, measure the population of newly created elements in supernova remnants, and detect the influence of dark matter on the hot intergalactic medium in clusters of galaxies. Constellation-X is identified in the Office of Space Science strategic plan.

Activities: "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]
"Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]
Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B68. Gamma-Ray Large Area Space Telescope (GLAST)

Description: GLAST is scheduled for launch in late 2006. With GLAST, scientists hope to explore the limits of gravity and energy in the Universe, and study nature's highest energy acceleration processes. The instruments aboard GLAST have an imaging gamma-ray telescope that is vastly more capable than the instruments flown previously, as well as a secondary instrument to augment the study of gamma-ray bursts. The GLAST E/PO group has developed a program to promote inquiry into the origin and structure of the Universe and the fundamental relationship between energy and matter, concepts which are included in the Physical Science Content Standards A, B, and D for grades 9–12. The GLAST Telescope Network (GTN) is being designed to provide information to ground-based visible light telescopes in conjunction with space-based observations of events producing gamma rays; as well as the development of a ground-based imaging and data archive. The GLAST Educator Ambassador Program consists of 10 educators, who will work in conjunction with GLAST science and E/PO team members at SSU and Stanford Linear Accelerator (SLAC) to develop workshops and curriculum materials. Many printed materials are being developed including TOPS Lesson Modules and posters accompanied by educator guides. The GLAST E/PO group also maintains a public-oriented Web site that includes an "Ask a Scientist" feature. Among future programs is an Interactive Gamma-Ray Detector Exhibit under development at Stanford Linear Accelerator's Virtual Visitor Center and additional Space Mysteries, interactive video games that teach physical science and mathematics. Also in development with Thomas Lucas Productions is a NOVA or PBS special that takes a sweeping look at high-energy astrophysics.

Lead: Dr. Lynn Cominsky, Sonoma State University, Department of Physics and Astronomy, 1801 East Cotati Avenue, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

URL: <http://glast.gsfc.nasa.gov>

Activities: "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]
"Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
"Exploring the Extreme Universe!": Student Presentations [A254]
GLAST High-Energy Classroom Teacher Workshops [A160]
GLAST: Public Presentations [A365]
SEU Forum: Mission Support [A417]
Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
XMM-Newton High-Energy Classroom Teacher Workshops [A218]

B69. Gravity Probe B Relativity Mission (GP-B)

Description: GP-B is producing and distributing educational materials that communicate the science and technology related to the mission, including Einstein's General Theory of Relativity. In addition, GP-B is participating in conferences and workshops to teach students, teachers and the general public about GP-B. Materials include posters, an educator's guide, lithograph sets, a DVD video, and brochures. Most materials are available on the GP-B Web site. Additionally, the GP-B Web site is developing a "Spacetime and Relativity" section to introduce and educate users about these concepts.

Lead: Mr. Shannon Range, Stanford University, HEPL 4085, Stanford, CA 94305. E-mail: www@relgyro.stanford.edu.

Contact: Ms. Jennifer Spencer, Stanford University, HEPL 4085, Stanford, CA 94305. E-mail: www@relgyro.stanford.edu.
 URL: <http://einstein.stanford.edu>
 Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
 Examining Einstein's Spacetime with Gravity Probe-B [A157]
 SEU Forum: Mission Support [A417]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B70. Laser Interferometer Space Antenna (LISA)

Description: The Space Place has involved LISA in various events/activities. We attend conferences to promote Space Place and all of the projects involved with the Web site. Usually, mission- or Space Place-related items are passed out. Libraries, science museums, planetariums, zoos and aquariums across the United States have formed "Club Space Place" partnerships with NASA. They get Space Place-provided display materials, an activity guide, and handouts for an original group activity. Through these partnerships we promote the Space Place Web site and NASA missions. Club Space Place provides quarterly interdisciplinary hands-on activities that are space or Earth science related. These quarterly activities go to the Space Place library and museum partners, Boys & Girls Clubs of America, YWCA, and the Civil Air Patrol. Presently there are 272 partners reaching thousands of children. On a monthly basis, Space Place provides articles for over 20 newspapers nationwide in both English and Spanish. The combined readership of these newspapers adds up to more than 2.5 million. The articles always end with information on activities and a link to the Space Place Web site and OSS mission Web sites. Diane Fisher submits articles to "Technology and Children" magazine four times a year, and articles to "The Technology Teacher" magazine eight times a year. Each article, published under the Space Place header, refers to a particular mission. Each "Technology and Children" publication reaches an estimated 1,400 teachers and their students (possibly 42,000 children), and each "The Technology Teacher" publication reaches an estimated 8,000 teachers and their students (possibly 224,000 children). Each article is also posted on ITEA's Web site, which reaches an even wider audience. The Space Place Web site is a dynamic site that offers interactive experiences and fun facts for children and adults. The Space Place is supported by the New Millennium Program. It reaches an average of 3,000 web users per day.

Lead: Ms. Nancy Leon, NASA Jet Propulsion Laboratory, M/S 171-350, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Nancy.J.Leon@jpl.nasa.gov. Phone: 818-354-1067.

URL: <http://spaceplace.nasa.gov>

Activities: Amateur Astronomy Club Activity [A335]
 Center for Gravitational Wave Astronomy [A60]
 "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]
 SEU Forum: Mission Support [A417]
 Space Place: Newspaper Articles [A431]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

Explorers

B72. Cosmic Hot Interstellar Plasma Spectrometer (CHIPS)

Description: CHIPS uses an extreme ultraviolet spectrograph during its mission to study the "Local Bubble," a tenuous cloud of hot gas surrounding our Solar System that extends about 300 light-years from the Sun. The million degree gas in this region is thought to be generated by supernovas and stellar winds from hot, young stars. But the origins and cooling mechanisms of the gas in the Local Bubble still need to be understood. CHIPS, the first University Class Explorer (UNEX), was launched in January 2003. The CHIPS E/PO program has developed classroom materials and lessons focusing on the fundamental physics concepts behind the mission. These are disseminated through teacher workshops, public events, NASA education networks, and a Web site.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, MC 7450, Berkeley, CA 94720. E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

URL: http://cse.ssl.berkeley.edu/chips_epo

Activities: CHIPS Classroom Visits and Student Support [A250]
 CHIPS: Public Outreach and Informal Education [A349]
 CHIPS: Scientist Involvement in E/PO [A350]
 Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Curriculum Dissemination [A223]

Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Science Investigation: Exploring the Interstellar Medium [A95]
 “Cosmic Questions: Our Place in Space and Time” Traveling Exhibition [A9]
 RHESSI Teacher Professional Development [A191]
 RHESSI: Public Outreach and Informal Education [A411]
 SEC Forum: Informal and Public Outreach [A415]
 SEU Forum: Mission Support [A417]
 SPIDR Teacher Professional Development Workshops [A199]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
 Sun-Earth Connection Education Forum (SECEF) Professional Development: Sharing Sun-Earth Connections with Inservice Teachers [A206]

B73. Extreme Ultraviolet Explorer (EUVE)

Description: The EUVE astronomy mission operated in the largely unexplored extreme ultraviolet (70-760 \AA) band. The science payload consisted of three grazing incidence scanning telescopes and an extreme ultraviolet (EUV) spectrometer/deep survey instrument. The spacecraft was launched in June 1992 and was completely successful, exceeding its science goals. EUVE was turned off in January 2001.

Activities: “Passport to the Solar System” (PTSS) [A232]

B74. Galaxy Evolution Explorer (GALEX)

Description: The Space Place has involved GALEX in the following events/activities. We attend conferences to promote Space Place and all of the projects involved with the Web site. Usually, mission- or Space Place-related items are passed out. Libraries, science museums, planetariums, zoos and aquariums across the United States have formed “Club Space Place” partnerships with NASA. They get Space Place-provided display materials, an activity guide, and handouts for an original group activity. Through these partnerships we promote the Space Place Web site and NASA missions. Club Space Place provides quarterly interdisciplinary hands-on activities that are space or Earth science related. These quarterly activities go to the Space Place library and museum partners, Boys & Girls Clubs of America, YWCA, and the Civil Air Patrol. Presently there are 272 partners reaching thousands of children. On a monthly basis, Space Place provides articles for over 20 newspapers nationwide in both English and Spanish. The combined readership of these newspapers adds up to more than 2.5 million. The articles always end with information on activities and a link to the Space Place Web site and OSS mission Web sites. Diane Fisher submits articles to “Technology and Children” magazine four times a year, and articles to “The Technology Teacher” magazine eight times a year. Each article, published under the Space Place header, refers to a particular mission. Each “Technology and Children” publication reaches an estimated 1,400 teachers and their students (possibly 42,000 children), and each “The Technology Teacher” publication reaches an estimated 8,000 teachers and their students (possibly 224,000 children). Each article is also posted on ITEA's Web site, which reaches an even wider audience. The Space Place Web site is a dynamic site that offers interactive experiences and fun facts for children and adults. The Space Place is supported by the New Millennium Program. It reaches an average of 3,000 web users per day.

Lead: Ms. Nancy Leon, NASA Jet Propulsion Laboratory, M/S 171-350, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Nancy.J.Leon@jpl.nasa.gov. Phone: 818-354-1067.

URL: <http://spaceplace.nasa.gov>

Activities: Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B75. Rossi X-ray Timing Explorer (RXTE)

Description: The Rossi X-ray Timing Explorer (RXTE), launched in December 1995, continues to return a stream of impressive results on the physics of matter near sources of extreme gravity (neutron stars, black holes, and the supermassive black hole cores of active galaxies). The mission—a collaboration between NASA's Goddard Space Flight Center, MIT, and University of California, San Diego—centers on three flight instruments in a low-Earth orbit, that investigate the 2-250 keV X-ray spectral and milliseconds-to-years timing variability of astronomical sources. Since early in the mission, RXTE has supported an active E/PO program involving the RXTE Learning Center, an online educational resource for teachers and students. RXTE has also hosted teacher interns to design and develop lesson plans and classroom activities based on RXTE results. Recent accomplishments include the All Sky Monitor-based “Tour the X-ray Sky”, which uses real data to introduce students to the types of variability seen in X-ray sources, and a series of supporting educator workshops to train teachers on the use of this module in their classroom. During the next 2 years, the RXTE E/PO program will focus on the classroom testing and educator dissemination of a collection of newly developed activities to go with a multimedia RXTE product—“The High Energy Groovie Movie.” This movie mates an animation of the X-ray

variability of the entire sky over several years of the mission (developed by the All Sky Monitor team at MIT) with a high-energy original pop song, High Energy Groove (written and recorded by the Chromatics as part of the AstroCappella project), which describes the basics of modern X-ray astronomy. The activities, which were developed by two Maryland teacher interns in the summer of 2002, cover a range of topics, including the technology behind the PCA detectors, how accretion works in close binary systems, neutron stars and pulsars, active galaxies, and the electromagnetic spectrum.

Lead: Dr. Patricia Boyd, NASA Goddard Space Flight Center, Code 662, Greenbelt, MD 20771. E-mail: padi@hea1.gsfc.nasa.gov. Phone: 301-286-2550.

URL: http://rxte.gsfc.nasa.gov/docs/xte/learning_center

Activities: Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B76. Spectroscopy and Photometry of the IGMs Diffuse Radiation (SPIDR)

Description: The Spectroscopy and Photometry of the Intergalactic Medium's Diffuse Radiation (SPIDR) mission, selected in July 2002 as one of two Small Explorer-class missions, was intended to answer fundamental questions about the creation and evolution of galaxies and other large stellar formations. Specifically, the spacecraft was designed to detect and determine the distribution of hot gases that permeate the universe. The SPIDR Mission was subsequently terminated. NASA has asked the team to resubmit the SPIDR proposal with further details with the new cycle of SMEX proposals. Further continuation of the E/PO might resume if SPIDR is selected in this new cycle.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.

E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Bryan Mendez, University of California, Berkeley, MC 7450, Berkeley, CA 94720.

E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]

SEU Forum: Mission Support [A417]

SPIDR Teacher Professional Development Workshops [A199]

B77. Submillimeter Wave Astronomy Satellite (SWAS)

Description: SWAS is part of the Small Explorer program. SWAS studies the chemical composition, energy balance and structure of interstellar clouds and the processes that lead to the formation of stars and planets. (Launched December 5, 1998)

Activities: Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B78. Swift Gamma Ray Burst Mission

Description: The Swift Gamma Ray Burst Explorer is a NASA medium-sized explorer (MIDEX) mission being developed by an international collaboration for launch in 2004. Swift is the first of its kind: a multi-wavelength observatory dedicated to the study of gamma-ray bursts. The main mission objectives of Swift include: determining the origin of gamma-ray bursts, classifying gamma-ray bursts as well as searching for new types, determining how the blast wave evolves and interacts with the surroundings, the use of gamma-ray bursts to study the early universe, and performing a sensitive survey of the sky in the hard x-ray band. Swift has a complement of three coaligned instruments that study bursts in the gamma-ray, x-ray, ultraviolet and optical bands. Using prompt burst location information, Swift can slew quickly to point its on-board x-ray and UV/optical instrumentation at the burst for continued afterglow studies. The goal of the Swift mission E/PO at Sonoma State University is to use the observations and scientific discoveries of the Swift mission to improve the understanding and utilization of science and mathematics concepts for grades 7–12. The program, which includes posters accompanied by educator guides, has developed "Invisible Universe: From Radio Waves to Gamma-Rays," in partnership with the GEMS group at the Lawrence Hall of Science. "What's In The News?" a television show, produced by Penn State, informs middle-school students across the country about Swift in several different segments that are produced each year. Penn State also offers yearly workshops for science educators that feature Swift and other space-based telescopes. Evaluation and guidance of the development of educational materials comes from the Swift Education Committee (SwEC) and four Swift Educator Ambassadors, who also help to disseminate Swift's educational materials.

Lead: Dr. Lynn Cominsky, Sonoma State University, Department of Physics and Astronomy, 1801 East Cotati Avenue, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

URL: <http://swift.gsfc.nasa.gov>

Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]

"Invisible Universe": Educator Workshops [A169]

SEU Forum: Mission Support [A417]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
 Swift Gamma Ray Burst Mission: High-Energy Student Presentations [A322]
 Swift Gamma Ray Burst Mission: Public Presentations [A451]
 Swift Television: "What's in the News?" [A323]
 The Electromagnetic Spectrum Poster [A128]
 XMM-Newton High-Energy Classroom Teacher Workshops [A218]

B79. Wilkinson Microwave Anisotropy Probe (WMAP)

Description: WMAP continues to concentrate its E/PO efforts in electronic forms. WMAP's mission page and "Teacher's Guide to the Universe" Web site explain both the basics about cosmology as well as mission details. Additionally, WMAP has supported the SEU Forum's creation of the "Cosmic Questions" exhibit and Space Science Update Kiosk. WMAP has created four postcards for public and educational outreach and has helped to create a mission card for the Cosmic Journeys Card game. WMAP has been represented at national and state conferences by education staff, and it has contributed to SEU Forum Kits. The WMAP E/PO coordinator has led a course for an informal audience at a local planetarium. WMAP continues to work with the Cooperative Satellite Learning Program and Old Bridge High School.

Lead: Dr. David Spergel, Princeton University, Peyton Hall, Dept. of Astrophysics, Princeton, NJ 08544-1001.
 E-mail: dns@astro.princeton.edu. Phone: 609-258-3589.

Contact: Ms. Lindsay Bartolone, Adler Planetarium and Astronomy Museum, Education, 1300 S. Lake Shore Drive, Chicago, IL 60605. E-mail: clark@astro.princeton.edu. Phone: 312-322-0316.

URL: <http://map.gsfc.nasa.gov>

Activities: "A Teacher's Guide to the Universe": MAP Workshop [A143]
 "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]
 "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
 SEU Forum: Mission Support [A417]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]
 WMAP Cooperative Satellite Learning Project (CSLP) [A329]
 WMAP Informal Outreach: MAPping the Cosmic Microwave Background [A464]
 York College Observatory Educational Outreach Program (YCOOP) [A58]

Attached Payloads

B80. Advanced Cosmic-Ray Composition Experiment for the Space Station (ACCESS)

Description: ACCESS is being developed for a possible launch in 2007. This experiment will make spectral, individual element composition measurements at energies reaching up to 10^{15} electronvolts, in order to address fundamental questions concerning the origin and acceleration of the cosmic radiation.

Activities: Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

Other NASA Programs

B81. High Energy Astrophysics Science Archive Research Center (HEASARC)

Description: Since 1996, the HEASARC E/PO program has been bringing information and curriculum support materials to upper middle school, high school, and lower undergraduate students and their teachers on topics relating to the structure and evolution of the universe, with an emphasis on high-energy astronomy. The E/PO program consists of the "Imagine the Universe!" Web site, a series of poster and information/activity booklets, and a repertoire of educator workshops. Both scientists and educators are involved in the development and testing of the materials, which use satellite data to teach topics in science and math. HEASARC also hosts the StarChild Web site and annually publishes a CD-ROM containing "Imagine", "StarChild", and the "Astronomy Picture of the Day". Materials are distributed to thousands of educators via workshops, meetings, and email requests. The HEASARC also coordinates with the E/PO programs of other SEU high-energy astrophysics missions such as RXTE, GLAST, Swift, and XMM.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Code 662, Greenbelt, MD 20771.
 E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

URL: <http://heasarc.gsfc.nasa.gov>

Activities: "Black Holes in a Different Light": Educator Workshop [A146]
 "Cosmic Journeys" Collectible Card Game: Educator Workshop [A150]

- "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
- "Elements 2002": Follow-Up Educator Workshop [A156]
- "Hidden Lives of Galaxies": Educator Workshop [A164]
- "Life Cycles of Stars": Workshop [A170]
- Overview of StarChild Web Site [A187]
- Scientist Shadowing [A193]
- SEU Forum: Mission Support [A417]
- "What is Your Cosmic Connection to the Elements?" [A135]
- "What is Your Cosmic Connection to the Elements?": Educator Workshop [A217]
- "What is Your Cosmic Connection to the Elements?": Student Presentation [A328]

International Missions with NASA Participation

B82. Cosmic Background Explorer (COBE)

Description: The COBE satellite was developed to measure the diffuse infrared and microwave radiation from the early Universe, to the limits set by our astrophysical environment. It was launched in November 1989 and carried three instruments: a Far Infrared Absolute Spectrophotometer (FIRAS) to compare the spectrum of the cosmic microwave background radiation with a precise black body, a Differential Microwave Radiometer (DMR) to map the cosmic radiation precisely, and a Diffuse Infrared Background Experiment (DIRBE) to search for the cosmic infrared background radiation. The cosmic microwave background spectrum was measured with a precision of 0.005 percent; the results confirmed the Big Bang theory of the origin of the Universe.

URL: <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1989-089A>

Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A2335]

B83. High Energy Transient Explorer 2 (HETE-2)

Description: HETE-2's prime objective is to carry out a multi-wavelength study of gamma-ray bursts (GRBs) with Ultraviolet, x-ray, and gamma-ray instruments. A unique feature of the mission is its capability to localize bursts with several-arcsecond accuracy in near real-time aboard the spacecraft. The original HETE spacecraft was lost as a result of a launch failure in November 1996. (HETE-2 was launched in October 2000.)

Lead: Dr. Irene Porro, Massachusetts Institute of Technology, NE80-6095, 77 Massachusetts Avenue, Cambridge, MA 02139. E-mail: iporro@space.mit.edu. Phone: 617-258-7481.

URL: <http://space.mit.edu/HETE>

Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]
 SEU Forum: Mission Support [A417]
 Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B84. Astro-E2

Description: Astro-E2 is a joint U.S.-Japanese mission to explore the x-ray universe at high spectral resolution. The mission uses a microcalorimeter which determines x-ray energies from cosmic sources by measuring the heat deposited by the x-rays into an absorbing material. To accomplish this, the detector is cooled to 60 milli-Kelvin using an adiabatic de-magnetization refrigerator. The mission also includes lightweight mirrors to focus the x-rays onto the detectors. Astro-E2 will probe the chemical composition of supernova remnants and galaxy clusters, and measure the motion of material before it falls into a black hole. The E/PO program for the mission seeks to bring students into the science and technology of the mission. Working with the NASA Student Involvement Program, Astro-E2 will sponsor a competition for students to share in the data from the mission. This effort will be supported by the Astro-E2 Guest Observer Facility at NASA's Goddard Space Flight Center. We will also produce a video which tells the story of the science, technology, and history of the mission for teachers to use in their science, math, or social studies classes. The video will particularly touch on the cross-cultural aspects of working with the Japanese. These efforts will be supported by a Web site, which will provide background material and lessons on the use of spectroscopy in x-ray astronomy.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Code 662, Greenbelt, MD 20771.

E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

URL: http://astroe.gsfc.nasa.gov/docs/astroe_lc

Activities: Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

B85. International Gamma-Ray Astrophysics Laboratory (INTEGRAL)

Description: INTEGRAL is an international gamma ray mission led by the European Space Agency with NASA participation. The Laboratory for High-Energy Astrophysics at NASA Goddard Space Flight Center provides science support services for the U.S. astronomers participating in the mission. INTEGRAL's key science question is to probe the origin of the elements by studying gamma ray emission lines from the galactic center, supernovae, black holes, and the sun. The E/PO program features the development of a poster and activity booklet on the topic of the origin of the elements. Development of these materials includes a week-long educator workshop which provides content for the participants and development of classroom activities by the participants. The E/PO program also includes the development of a Gamma-ray comic book, which will explain gamma-ray astronomy and various techniques used to detect cosmic gamma rays.

Lead: Dr. James Lochner, NASA Goddard Space Flight Center, Code 662, Greenbelt, MD 20771.

E-mail: lochner@xeric.gsfc.nasa.gov. Phone: 301-286-9711.

URL: <http://obswww.unige.ch/isdc/Outreach>

Activities: "Elements 2002": Follow-Up Educator Workshop [A156]

Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

"What is Your Cosmic Connection to the Elements?" [A135]

B86. X-ray Multi-Mirror Mission (XMM-Newton)

Description: XMM-Newton is a European Space Agency x-ray spectroscopy observatory launched in December 1999. Beginning in 2003, NASA participation in the XMM-Newton E/PO program has been led by the group at Sonoma State University. The program is developing curriculum materials for grades 6-12, a computer-based x-ray spectroscopy simulation laboratory exercise in partnership with Project CLEA (Contemporary Laboratory Experiences in Astronomy), and a Starlab planetarium program showcasing the X-ray sky.

Lead: Dr. Lynn Cominsky, Sonoma State University, Department of Physics and Astronomy, 1801 East Cotati Avenue, Rohnert Park, CA 94928. E-mail: lynnc@charmian.sonoma.edu. Phone: 707-664-2655.

URL: <http://xmm.sonoma.edu>

Activities: "Cosmic Questions: Our Place in Space and Time" Traveling Exhibition [A9]

"Science Concepts in Context" [A235]

SEU Forum: Mission Support [A417]

Structure and Evolution of the Universe (SEU) Educator Ambassadors [A204]

XMM-Newton High-Energy Classroom Teacher Workshops [A218]

SUN-EARTH CONNECTION MISSIONS**Major Missions****B87. Interstellar Probe (IS)**

Description: The Interstellar Probe is a mission in the very early concept definition phase that is designed to cross the solar wind termination shock and heliopause and make a significant penetration into the local interstellar medium, characterizing the regions it passes. This mission offers a significant technological challenge in that its success will require the achievement of spacecraft velocities of 10 astronomical units (10 times the Earth-Sun distance) per year.

URL: <http://interstellar.jpl.nasa.gov>

Activities: "Space Weather Center" Traveling Exhibit [A19]

B88. Solar Probe (SP)

Description: Solar Probe (SP) will be the first visit to our star to explore the complex and time-varying interplay of the Sun and Earth which affects human activity. SP will determine where and what physical processes heat the corona and accelerate the solar wind to its super-sonic velocity. A combined remote sensing and in-situ sampling from within the solar corona itself will provide a "ground" never before available from astronomical measurements made from spacecraft in the Earth's orbit or LaGrange points. Solar Probe is currently being developed as part of the Sun-Earth Connection theme within the NASA Office of Space Science.

URL: <http://solarprobe.gsfc.nasa.gov>

Activities: "Space Weather Center" Traveling Exhibit [A19]

B89. Ulysses

Description: Ulysses makes passes over the north and south poles of the Sun in order to forecast solar weather. The spacecraft was the first to explore interplanetary science at high solar latitudes. Launched in October 1990, it has provided scientific data for the last 12 years. Students from Los Angeles County compete for interview opportunities with team members on space science, spacecraft design, spacecraft operations, and project management. Students' interests are matched with team-member volunteers. Students conduct research and professional interviews and make a professional presentation at the end of the project. A team member attends and evaluates all presentations.

URL: <http://www.ulysses.jpl.nasa.gov/index.html>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]
 "Live from the Aurora" and "Auroras: Living With a Star" [A274]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A235]
 Solar System Community Events Program [A423]
 Sun-Earth Connections Educator Kit [A125]

B90. Voyager

Description: The Voyager mission continues its quest to expand the boundaries of space exploration. Voyager 1, now the most distant human-made object in the Universe, and Voyager 2, close on its heels, continue their ground-breaking journeys with their current mission to study the region in space where the Sun's influence ends and the dark recesses of interstellar space begin. E/PO goals include: (1) continuing to improve the quality and quantity of project participation in outreach programs; (2) interacting with Deep Space Network Outreach, the Jet Propulsion Laboratory (JPL) education office, the Sun-Earth Connection (SEC) community, and the project's investigators to assist in the development of classroom tools; (3) increasing the level of Voyager public awareness with the help of the JPL media relations office; (4) continuing collaborations with the Stanford Solar Center and the SEC Broker/Facilitators; (5) participating in SEC Forum Sun-Earth Day teacher training and the live Webcast; (6) attending the National Science Teachers Association meeting as a partner with the SEC Forum.

Lead: Dr. Andrea Angrum, NASA Jet Propulsion Laboratory, 264-801, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: andrea.angrum@jpl.nasa.gov. Phone: 818-354-6775.

URL: <http://voyager.jpl.nasa.gov>

Activities: Girl Scouts of the USA/NASA Collaboration [A65]
 "Live from the Aurora" and "Auroras: Living With a Star" [A274]
 "Passport to the Solar System" (PTSS) [A232]
 "Science Concepts in Context" [A235]
 Solar System Community Events Program [A423]
 Sun-Earth Connections Educator Kit [A125]
 Sun-Earth Day [A449]
 Voyager Classroom Visits [A327]
 Voyager Conferences [A461]
 Voyager Speakers Bureau [A462]

Solar-Terrestrial Probes

B91. Solar-Terrestrial Probes Program Office (STP)

Description: The STP program is a comprehensive effort to observe and understand our star and its effect on our environment. The E/PO effort focuses on sharing those discoveries in the formal and informal education communities through mentoring, exhibits, and workshops.

Lead: Ms. Barbara Lambert, NASA Goddard Space Flight Center, Code 460, Greenbelt, MD 20771.
 E-mail: blambert@hst.nasa.gov. Phone: 301-286-1275.

URL: <http://stp.gsfc.nasa.gov>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
 "Science Concepts in Context" [A235]
 Solar Terrestrial Probes Planetarium, Science Centers and Museum Outreach [A424]
 Solar Terrestrial Probes: Classroom and Public Engagements [A425]
 "Space Weather Center" Traveling Exhibit [A19]

B92. Geospace Electrodynamic Connections (GEC)

Description: The Geospace Program will consist of two primary flight investigations, a Radiation Belt Baseline Investigation and an Ionosphere-Thermosphere (I-T) Investigation. The Baseline Radiation Belt Investigation comprises three components: (1) in situ measurement from two spacecraft of radiation belt particles and fields and of ring current H⁺ and O⁺ in a highly elliptical orbit; (2) measurement of precipitating particles from low Earth orbit; and (3) global energetic neutral atom imaging of the ring current. The Baseline I-T Investigation will consist of two key elements: (1) in situ (and limited remote sensing) measurements in the I-T system and (2) imaging of the global low- and mid-latitude I-T system from a high-altitude platform. An integral element of the Geospace Program is the development of models that will incorporate the improved physical understanding of these two regions to provide improved real-time specification of the space environment (nowcasting) and prediction of potentially hazardous space weather conditions (forecasting).

URL: <http://lws.gsfc.nasa.gov/geospace.htm>

Activities: "In a Different Light" [A112]

B95. Solar-B

Description: The Solar-B satellite observatory will be launched into a polar orbit around the Earth to allow almost uninterrupted observations of our Sun. Three major instruments will make coordinated observations at multiple wavelengths, examining processes taking place on the Sun's surface and in its atmospheric envelope. Solar-B E/PO is primarily developed and implemented at the new Chabot Space and Science Center in Oakland, CA in collaboration with the Lockheed-Martin Solar and Astrophysics Lab. Forms of E/PO include exhibits, teacher training workshops, video/multimedia productions, posters and brochures, an adult solar astronomy class, "solar" summer camps for children, and a high school solar astronomy internship program.

Lead: Mr. Benjamin Burress, Chabot Space and Science Center, 10902 Skyline Blvd, Oakland, CA 94619. E-mail: bburress@chabotspace.org. Phone: 510-336-7308.

URL: <http://www.chabotspace.org/vsc/exhibits/solarb/default.asp>

Activities: "By the Light of the Sun" [A1]
"Fun in the Sun" Summer Camp [A363]
Sun-Earth Day [A449]
"Sunspotting: Tracking the Wild Sunspot" [A450]
"Touch the Sun": Teacher Workshop [A213]

B96. Solar-Terrestrial Relations Observatory (STEREO)

Description: STEREO is the third of five Solar Terrestrial Probes. This mission will obtain simultaneous images of the Sun from two spacecraft and build a 3-D picture of coronal mass ejections (CMEs) and the complex structures around them. STEREO will also study the propagation of disturbances through the heliosphere and their effects at Earth orbit. The STEREO E/PO program participates in the Sun-Earth Connection Education Forum-sponsored workshops that meet the needs of educators at all grade levels. We present these workshops to inservice educators to teach them about the most recent and relevant solar and STEREO science discoveries, which they will then teach in their classrooms. Mission scientists participate in the workshops to share the science content. Education specialists provide integrated, hands-on activities to demonstrate science application in the classroom. The missions also provide images and animations to support programs that have been developed by the science centers specifically for educators and for the general public.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720. E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

URL: <http://stp.gsfc.nasa.gov/missions/stereo/stereo.htm>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
New Horizons Public Outreach [A404]
New Horizons Student Support [A298]
RHESSI Teacher Professional Development [A191]
SEC Forum: Formal Education Student Support [A309]
SEC Forum: Informal and Public Outreach [A415]
STEREO/IMPACT: Classroom Visits and Student Support [A318]

Sun-Earth Connection Education Forum (SECEF) Professional Development: Sharing Sun-Earth Connections with Inservice Teachers [A206]
TIMED Student Support [A324]

B97. Thermosphere Ionosphere Mesosphere Energetics and Dynamics (TIMED)

- Description:** The TIMED mission is currently studying the influences of the Sun and human activity on the least explored and understood region of Earth's atmosphere: the Mesosphere and Lower Thermosphere/Ionosphere (MLTI). The MLTI region is the gateway between Earth's environment and space, where the Sun's energy is first deposited into Earth's environment. TIMED focuses on the portion of this region located approximately 60-180 kilometers above the surface. From studying portions of Earth's atmosphere, scientists believe global change is occurring, primarily due to variations in the Sun's cycle and the human-induced release of gases such as methane and carbon dioxide into the atmosphere. The TIMED E/PO Web site offers activities, a Teacher's Corner, and TIMED lesson plans.
- Lead:** Ms. Kerri Beisser, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: kerri.beisser@jhuapl.edu. Phone: 443-778-6050.
- Contact:** Ms. Linda Butler, Johns Hopkins Applied Physics Laboratory, Space Dept/E&PO Office, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: Linda.Butler@jhuapl.edu. Phone: 240-228-5746.
- URL:** <http://www.timed.jhuapl.edu>
- Activities:** "Live from the Aurora" and "Auroras: Living With a Star" [A274]
New Horizons Public Outreach [A404]
New Horizons Student Support [A298]
"Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]
Student Observation Network (SON) [A319]
Sun-Earth Day [A449]
TIMED Public Outreach [A454]
TIMED Student Support [A324]

Explorers

B98. Advanced Composition Explorer (ACE)

- Description:** The primary purpose of the ACE is to determine and compare the isotopic and elemental composition of several distinct samples of matter, including the solar corona, the interplanetary medium, the local interstellar medium, and galactic matter. For education and public outreach, ACE shares the following topics through a Web site, printed materials, workshops, and presentations: the composition of the Solar System and extrasolar bodies, particle composition from solar wind to galactic cosmic rays, the causes and effects of transient events, solar and galactic evolution, and stellar nucleosynthesis.
- Lead:** Ms. Beth Jacob, NASA Goddard Space Flight Center, Code 661, Greenbelt, MD 20771.
E-mail: beth@milkyway.gsfc.nasa.gov. Phone: 301-286-7209.
- URL:** <http://www.srl.caltech.edu/ACE/ASC>
- Activities:** ACE Public Outreach Talks [A332]
Career Day at Lowell Bayside Academy [A245]
Career Opportunities in Space Engineering and Space Science [A246]
"Live from the Aurora" and "Auroras: Living With a Star" [A274]
Mars Close-Up Showing [A379]
NASA Connect: Having a Solar Blast [A293]
"Passport to the Solar System" (PTSS) [A232]
Science and Mathematics Achievement Through Research Training (Project SMART) [A306]
"Science Concepts in Context" [A235]
"Space Weather Center" Traveling Exhibit [A19]
Student Observation Network (SON) [A319]
Sun-Earth Day [A449]
University of New Hampshire: Public Television Interview [A460]

B99. Fast Auroral Snapshot Explorer (FAST)

- Description:** The FAST Explorer was launched into orbit in August 1996. The instruments aboard FAST measure charged particles which enter Earth's upper atmosphere. Large waves of these particles from the Sun begin to glow

once inside Earth's atmosphere, causing a spectacular light show known as the aurora borealis or northern lights. The education and public outreach for FAST includes K–12 curriculum components such as lessons, activities, and information that will help teachers and students understand the aurora, the sounding rockets, and the satellites that study them.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.

E-mail: ncraig@ssl.berkeley.edu. Phone: 510-643-7273.

Contact: Dr. Laura Peticolas, University of California, Berkeley, 7504, Berkeley, CA 94720.

E-mail: laura@ssl.berkeley.edu. Phone: 510-643-7273.

URL: http://cse.ssl.berkeley.edu/fast_epo

Activities: CHIPS Classroom Visits and Student Support [A250]

FAST Classroom Visits and Student Support [A257]

“Live from the Aurora” and “Auroras: Living With a Star” [A274]

RHESSI Teacher Professional Development [A191]

RHESSI: Public Outreach and Informal Education [A411]

Science and Mathematics Achievement Through Research Training (Project SMART) [A306]

SEC Forum: Formal Education Student Support [A309]

SEC Forum: Informal and Public Outreach [A415]

Sun-Earth Connection Education Forum (SECEF) Professional Development: Sharing Sun-Earth Connections with Inservice Teachers [A206]

B100. Imager for Magnetopause-to-Aurora Global Exploration (IMAGE)

Description: The IMAGE satellite is the first spacecraft dedicated to imaging Earth's magnetosphere, a region of space that is controlled by Earth's magnetic field and contains extremely tenuous plasmas of both solar and terrestrial origin. IMAGE employs a variety of imaging techniques to see the invisible and produce the first comprehensive global images of plasma in the inner magnetosphere. The IMAGE education and public outreach program is called Public Outreach, Education, Teaching and Reaching Youth (POETRY). We specialize in developing classroom activities, CD-ROMs, and other products that help students understand Earth's magnetic field, its radiation belts, and the impact of solar activity on our technology. The goal of POETRY is to rewrite textbooks to explain the causes of auroras, update K–12 descriptions of Earth's magnetic field and its systems of particles, and to provide teachers with the latest information about the effects of space weather. We also conduct an award-winning “Ask the Space Scientist” Web-based forum, where students may ask questions about space science.

URL: <http://image.gsfc.nasa.gov/poetry>

Activities: IMAGE Classroom Activities Archive [A110]

IMAGE Internet Activities [A111]

IMAGE Presentations to Students [A270]

IMAGE: Amateur Astronomy Clubs [A373]

IMAGE: Educational Radio Program [A374]

IMAGE: Planetarium and Museum Lectures [A375]

“Live from the Aurora” and “Auroras: Living With a Star” [A274]

NASA Connect: Having a Solar Blast [A293]

NASA/CONNECT [A401]

National Society of Black Physicists Annual Convention [A72]

“Passport to the Solar System” (PTSS) [A232]

“Science Concepts in Context” [A235]

Soda Bottle Magnetometer [A122]

“Space Weather Center” Traveling Exhibit [A19]

Student Observation Network (SON) [A319]

Sun-Earth Day [A449]

Sun-Earth Day Workshop [A476]

B101. Interplanetary Monitoring Platform (IMP-8)

Description: IMP-8 (also known as IMP-J) was launched by NASA in 1973 to measure the magnetic fields, plasmas, and energetic charged particles (e.g., cosmic rays) of Earth's magnetotail and magnetosheath and the near-Earth solar wind. IMP-8, the last of 10 IMP (Interplanetary Monitoring Platform) spacecraft launched in 10 years, continues to accumulate data that is useful in understanding long-term solar processes. IMP-8 scientists at NASA Goddard Space Flight Center provide their expertise through the validation of educational products

whose content deals with interplanetary and magnetotail studies of cosmic rays, energetic solar particles, plasma, and electric and magnetic fields.

Lead: Dr. Joseph King, NASA Goddard Space Flight Center, Code 633, Greenbelt, MD 20771. E-mail: Joseph.H.King.1@gsfc.nasa.gov. Phone: 301-286-7355.

URL: <http://nssdc.gsfc.nasa.gov/nmc/tmp/1973-078A.html>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
"Science Concepts in Context" [A235]

B102. Reuven Ramaty High Energy Solar Spectroscopic Imager (RHESSI)

Description: RHESSI is funded by NASA's Explorers Program under the category of small explorers. RHESSI may help to answer one of the most fundamental questions about how the Sun works: How do solar flares release such large quantities of energy in such a short span of time? (A single flare can be as powerful as 10 million volcanic explosions!) The centerpiece of the RHESSI mission is the imager, which uses a new technology to capture images and spectra of high-energy solar flares. RHESSI's primary E/PO goal is to provide high-quality education and outreach experiences for precollege teachers, students, and the general public. Additionally, through our university/NASA Center collaboration, RHESSI will be able to provide research opportunities to enhance the education of undergraduate and graduate students. Thus, the RHESSI E/PO effort will permeate all facets of the mission, allowing the college-level students to serve as effective liaisons to the precollege community that we plan to involve. The University of California, Berkeley's E/PO efforts will focus on middle and high school teachers, their students, and the public. In the formal arena, we will concentrate on the middle school grades 6–8, since here is where RHESSI-related content is taught in the precollege science curriculum and where students typically stop being interested in science. We will also conduct regular public awareness activities, highlighting RHESSI data in collaboration with the Exploratorium. The Exploratorium's "Live@the Exploratorium" Internet netcast series will be able to highlight RHESSI during the years of high solar activity through regularly scheduled public events. To complement these high-visibility Internet netcasts for the public, we will develop self-guided Internet modules that highlight key aspects of the RHESSI mission and its data.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.
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Contact: Dr. Bryan Mendez, University of California, Berkeley, MC 7450, Berkeley, CA 94720.
E-mail: bmendez@ssl.berkeley.edu. Phone: 510-643-2178.

URL: <http://cse.ssl.berkeley.edu/hessi>

Activities: Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Curriculum Dissemination [A95]

"Discover the Solar Cycle" [A96]

"Live from the Aurora" and "Auroras: Living With a Star" [A274]

NASA Connect: Having a Solar Blast [A293]

National Society of Black Physicists Annual Convention [A72]

RHESSI Teacher Professional Development [A191]

RHESSI: Classroom Visits and Student Support [A305]

RHESSI: Curriculum Dissemination [A234]

RHESSI: Public Outreach and Informal Education [A411]

"Science Concepts in Context" [A235]

SEC Forum: Informal and Public Outreach [A415]

"Space Weather Center" Traveling Exhibit [A419]

SPIDR Teacher Professional Development Workshops [A199]

Student Observation Network (SON) [A319]

Students United with NASA Becoming Enthusiastic About Math and Science (SUNBEAMS) [A78]

Sun-Earth Connection Education Forum (SECEF) Professional Development: Sharing Sun-Earth Connections with Inservice Teachers [A206]

Sun-Earth Connections Educator Kit [A125]

Sun-Earth Day [A449]

Sun-Earth Day Workshop [A476]

B103. Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX)

Description: SAMPEX is designed to detect solar energy particles, precipitating energetic electrons, anomalous cosmic rays, and galactic cosmic rays throughout a solar cycle. E/PO consists of SAMPEX scientists and engineers at NASA's Goddard Space Flight Center who support a high school team in the Cooperative Satellite Learning

Program (CSLP). The CSLP is a unique education partnership among various high schools, Allied Signal Technical Services Corporation in Seabrook, MD, and Goddard that involves high school students in the process of developing and operating SAMPEX. This pilot program provides students with an understanding of the overall end-to-end system that is used to support SAMPEX, and it will demonstrate how NASA implements a specific mission for a given scientific endeavor. It also introduces the students to careers in space. A mission monitoring system in the high school receives and processes SAMPEX satellite data and provides computer-assisted tutoring. In this way, students participate directly in SAMPEX tests, simulations, and orbital operations.

Lead: Mr. Jim Watzin, NASA Goddard Space Flight Center, Code 474, Greenbelt, MD 20771.

E-mail: jim.watzin@gsfc.nasa.gov. Phone: 301-286-7933.

URL: <http://sunland.gsfc.nasa.gov/smex/sampek/index.html>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]

B105. Time History of Events and Macroscale Interactions During Substorms (THEMIS)

Description: The Time History of Events and Macroscale Interactions during Substorms (THEMIS) is to be launched in 2007. THEMIS is a five-satellite mission with the job of determining the causes of the global reconfigurations of the Earth's magnetosphere that are evidenced in auroral activity. THEMIS consists of five small satellites, carrying identical suites of electric, magnetic, and particle detectors, that will be put in carefully coordinated orbits. Every four days the satellites will line up along the Earth's magnetic tail, allowing them to track disturbances. The satellite data will be combined with observations of the aurora from a network of observatories across the Arctic Circle. As part of the E/PO program for the THEMIS mission, new ground magnetometer stations will be established at secondary schools, tribal and community colleges in eight states. The Space Grant Consortia of the eight states (Alaska, Oregon, Montana, North Dakota, South Dakota, Wisconsin, Michigan, Pennsylvania) will work with the mission and the state schools to identify the location for the magnetometer stations, and will coordinate local educational and outreach effects of the new facility, its data, and the THEMIS mission, extending the impact of the magnetometer station beyond the single school at which it is located. The competition for selection of school sites will be in the fall of 2003.

Lead: Dr. Nahide Craig, University of California, Berkeley, MC 7450, Berkeley, CA 94720.

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URL: <http://sprg.ssl.berkeley.edu/themis>

Activities: THEMIS: Teacher Professional Development [A212]

B106. Transition Region and Coronal Explorer (TRACE)

Description: A mission of the Small Explorer program, TRACE observes the effects of the emergence of magnetic flux from deep inside the Sun to the outer corona with high spatial and temporal resolution. (TRACE was launched in April 1998.)

Lead: Ms. Dawn Myers, NASA Goddard Space Flight Center, Code 682.4, Greenbelt, MD 20771.

E-mail: dcm@chippewa.nascom.nasa.gov. Phone: 301-286-5283.

URL: <http://nis-www.lanl.gov/nis-projects/twins>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]

"Passport to the Solar System" (PTSS) [A232]

"Science Concepts in Context" [A235]

Student Observation Network (SON) [A319]

TRACE: Image Distribution to the Public [A457]

International Solar-Terrestrial Physics

B108. Cluster II

Description: Cluster is a European Space Agency program with major NASA involvement. The four Cluster spacecraft carry out 3-D measurements in Earth's magnetosphere, covering both large- and small-scale phenomena in the sunward and tail regions. The first two spacecraft were launched in July 2000; the second pair were launched in August 2000.

URL: <http://sci.esa.int/home/clusterii/index.cfm>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]

Science and Mathematics Achievement Through Research Training (Project SMART) [A306]

"Science Concepts in Context" [A235]

Sounds of Space-Science and Art [A428]

B109. Geotail

Description: The Geotail mission is a collaborative project undertaken by the Japanese Institute of Space and Astronautical Science (ISAS) and NASA. Its primary objective is to study the tail of Earth's magnetosphere. The information gathered is allowing scientists to model and more accurately predict Sun-Earth interactions and their effects on space exploration, communications, and technology systems. (Geotail was launched in July 1992.)

URL: <http://www-spf.gsfc.nasa.gov/istp/geotail>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
"Science Concepts in Context" [A235]

B110. Polar

Description: The Solar Terrestrial Science Program (STSP) composed of SOHO and Cluster, with Geotail (ISAS-Japan), Wind, and Polar, cooperates in E/PO by providing educational products, science data, and images that tell the story of the Sun. These materials (images) can be seen in most museums, planetariums, and science centers, and they support STSP's work with the general public. Images are also shown by national television broadcasting companies to share a solar event with the public when it happens.

Lead: Dr. Nicola Fox, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: foxnj1@jhuapl.edu.

URL: <http://www-spf.gsfc.nasa.gov/istp/polar>

Activities: "Life as a Space Scientist" [A273]
"Live from the Aurora" and "Auroras: Living With a Star" [A274]
"Passport to the Solar System" (PTSS) [A232]
Science and Mathematics Achievement Through Research Training (Project SMART) [A306]
"Science Concepts in Context" [A235]
Songs of the Aurora and Solar Wind at Family Adventures in Science [A427]
"Sounds of Plasma Waves in Space" [A312]
"Space Physics Research at the University of Iowa" [A313]
Student Observation Network (SON) [A319]
Sun Rings [A446]
Sun Rings: A Pre-Performance Presentation [A447]
Sun-Earth Connection (SEC) Classroom Visits [A321]
Sun-Earth Day [A449]
Tour of University of Iowa Department of Physics and Astronomy [A325]
University of Iowa Experimental Space Research Projects Talk [A459]
"University of Iowa Space Research: Past, Present, and Future" [A326]

B111. Wind

Description: The Solar Terrestrial Science Program (STSP) — composed of SOHO and Cluster, with Geotail (ISAS-Japan), Wind, and Polar — cooperates in education and public outreach by providing educational products, science data, and images that tell the story of the Sun. These materials (images) can be seen in most museums, planetariums, and science centers, and they support STSP's work with the general public. Images are also shown by national television broadcasting companies to share a solar event with the public when it happens.

Lead: Dr. Nicola Fox, Johns Hopkins Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099. E-mail: foxnj1@jhuapl.edu.

URL: <http://www-istp.gsfc.nasa.gov/istp/wind/wind.html>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
"Passport to the Solar System" (PTSS) [A232]
Science and Mathematics Achievement Through Research Training (Project SMART) [A306]
"Science Concepts in Context" [A235]
Student Observation Network (SON) [A319]
Sun-Earth Connection (SEC) Classroom Visits [A321]
Sun-Earth Day [A449]

B112. Solar and Heliospheric Observatory (SOHO)

Description: SOHO is designed to study the internal structure of the Sun, its extensive outer atmosphere, and the origin of the solar wind: the stream of highly ionized gas that blows continuously outward through the Solar System. SOHO is helping us to better understand the interactions between the Sun and Earth's environment. Its legacy

may enable scientists to solve some of the most perplexing riddles about the Sun, including the heating of the solar corona, the acceleration of the solar wind, and the physical conditions of the solar interior. It will give solar physicists their first long-term, uninterrupted view of the mysterious star that we call the Sun. The SOHO E/PO program generates and distributes materials on the Sun and SOHO for use in schools and by the public. The materials include posters, CDs, image sets, slide sets, stickers, and videos. Scientists give presentations in classrooms, at teacher workshops, in museums, and to other scientists. Materials are also provided to publications and news organizations.

Lead: Dr. Steele Hill, NASA Goddard Space Flight Center, Code 682.3, Greenbelt, MD 20771.
E-mail: steele.hill@gsfc.nasa.gov. Phone: 301-286-6452.

URL: <http://soho.nascom.nasa.gov>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
NASA Connect: Having a Solar Blast [A293]
National Society of Black Physicists Annual Convention [A72]
"Passport to the Solar System" (PTSS) [A232]
Science and Mathematics Achievement Through Research Training (Project SMART) [A306]
"Science Concepts in Context" [A235]
SOHO: Support for Educational Outreach [A420]
"Space Weather Center" Traveling Exhibit [A19]
Student Observation Network (SON) [A319]
Sun-Earth Connections Educator Kit [A125]
Sun-Earth Day [A449]
Sun-Earth Day Workshop [A476]

B113. Coupled Ion Neutral Dynamics Investigation (CINDI)

Description: The Coupled Ion-Neutral Dynamics Investigation (CINDI) is a NASA sponsored Mission of Opportunity conducted by the University of Texas at Dallas (UTD). CINDI will discover the role of ion-neutral interactions in the generation of small and large-scale electric fields in the Earth's upper atmosphere. Ion-neutral interactions are a key process in controlling the dynamics of all planetary atmospheres and their understanding is important to describing the electrodynamic connections between the Sun and the Upper Atmosphere.

URL: <http://129.110.7.63/heelis/cindi.html>

Activities: "In a Different Light" [A112]

B114. Living with a Star Program Office (LWS)

Description: Living With a Star (LWS) is a NASA initiative that addresses aspects of the Sun-Earth system that affect life and society. This program is a part of the Sun-Earth Connection (SEC) theme within the Office of Space Science. The program elements are (1) a space weather research network, (2) theory, modeling, and data analysis programs, (3) space environment testbeds, and (4) established and expanded partnerships. The goals and objectives link to each of the six NASA Strategic Enterprises: Space Science, Earth Science, Human Exploration and Development of Space, Aerospace Technology, Biological and Physical Research, and Education.

Lead: Dr. Evelina Félicité-Maurice, NASA Goddard Space Flight Center, Code 460 Bldg 6 S141, Greenbelt, MD 20771.
E-mail: efelicit@pop400.gsfc.nasa.gov. Phone: 301-286-6949.

URL: <http://lws.gsfc.nasa.gov>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
Living With a Star (LWS): Inservice Teachers Workshop [A171]
Living With a Star (LWS): Master Teacher Leadership and Mentor Program [A172]
Living With a Star (LWS): Preservice Workshop [A173]
LWS Follow-up Program and School Visits [A276]
LWS Information Technology Program [A230]
LWS Student Internship [A277]
"Our Star the Sun": Summer Institute [A186]
"Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]
Sun-Earth Connections Educator Kit [A125]
Sun-Earth Day [A449]
Sun-Earth Day Workshop [A476]
Teacher Workshops on Planet Finding [A207]

B115. Solar Dynamics Observatory (SDO)

Description: The Solar Dynamics Observatory (SDO) project is the first of the Living With a Star (LWS) programs under the Sun-Earth Connection (SEC) theme at NASA. The project goals are to understand the solar variations that influence life on Earth and humanity's technological systems by determining: (1) How the Sun's magnetic field is generated and structured; and (2) how this stored energy is converted and released into the heliosphere and geospace in the form of solar wind, energetic particles, and variations in the solar irradiance. The SDO E/PO program will focus primarily on informal education and public outreach efforts that share NASA's vision to "inspire the next generation of explorers, as only NASA can", promote science literacy and raise public awareness of the SEC theme, with emphasis on SDO research and discoveries.

Lead: Ms. Emilie Drobnes, NASA Goddard Space Flight Center, Code 682.3, Greenbelt, MD 20771. E-mail: Emilie@ihy.gsfc.nasa.gov. Phone: 301-286-3146.

URL: <http://sdo.gsfc.nasa.gov>

Activities: SDO: Dynamic Sun Workshops [A471]
SDO: Internships for Students [A307]
SDO: Public Speaking Engagements and Classroom Visits [A308]

B116. Space Technology-5 (New Millennium) (ST-5)

Description: The Space Place has involved ST-5 in various events/activities. We attend conferences to promote Space Place and all of the projects involved with the Web site. Usually, mission- or Space Place-related items are passed out. Libraries, science museums, planetariums, zoos and aquariums across the United States have formed "Club Space Place" partnerships with NASA. They get Space Place-provided display materials, an activity guide, and handouts for an original group activity. Through these partnerships we promote the Space Place Web site and NASA missions. Club Space Place provides quarterly interdisciplinary hands-on activities that are space or Earth science related. These quarterly activities go to the Space Place library and museum partners, Boys & Girls Clubs of America, YWCA, and the Civil Air Patrol. Presently there are 272 partners reaching thousands of children. On a monthly basis, Space Place provides articles for over 20 newspapers nationwide in both English and Spanish. The combined readership of these newspapers adds up to more than 2.5 million. The articles always end with information on activities and a link to the Space Place Web site and OSS mission Web sites. Diane Fisher submits articles to "Technology and Children" magazine four times a year, and articles to "The Technology Teacher" magazine eight times a year. Each article, published under the Space Place header, refers to a particular mission. Each "Technology and Children" publication reaches an estimated 1,400 teachers and their students (possibly 42,000 children), and each "The Technology Teacher" publication reaches an estimated 8,000 teachers and their students (possibly 224,000 children). Each article is also posted on ITEA's Web site, which reaches an even wider audience. The Space Place Web site is a dynamic site that offers interactive experiences and fun facts for children and adults. The Space Place is supported by the New Millennium Program. It reaches an average of 3,000 web users per day.

Lead: Ms. Nancy Leon, NASA Jet Propulsion Laboratory, M/S 171-350, 4800 Oak Grove Drive, Pasadena, CA 91109. E-mail: Nancy.J.Leon@jpl.nasa.gov. Phone: 818-354-1067.

URL: <http://spaceplace.nasa.gov>

Activities: Club Space Place Activities [A351]
Space Place: International Technology Education Association Journal [A430]
The Space Place Web Site [A453]

International Missions with NASA Participation

B117. Yohkoh

Description: Yohkoh, an observatory for studying x-rays and gamma rays from the Sun, is a project of the Institute for Space and Astronautical Sciences, Japan. The spacecraft was built in Japan, but contributions to the observing instruments were made by the United States and Great Britain. Yohkoh was launched in August 1991; the spacecraft lost attitude control in December 2001, and recovery attempts have been unsuccessful.

URL: <http://www.lmsal.com/SXT>

Activities: "Live from the Aurora" and "Auroras: Living With a Star" [A274]
"Passport to the Solar System" (PTSS) [A232]
"Science Concepts in Context" [A235]

APPENDIX C. Contributing Scientists, Technologists, and Support Personnel

The NASA Offices of Space Science (OSS) and Education are very pleased to acknowledge the more than 1,000 OSS-affiliated scientists, technologists, and support personnel who contributed to developing Education and Public Outreach (E/PO) products or conducting E/PO activities in FY 2003. The names and affiliations of these dedicated individuals are listed below. The numbers in brackets refer to the specific products and activities in appendix A to which the individuals contributed.

Individual	Affiliated Organization	See Page(s) . . .
Dr. Michael A'Hearn	University of Maryland	[A152, A358, A422]
Ms. Kim Aaron	NASA Jet Propulsion Laboratory	[A233]
Mr. Mark Abernathy	Space Telescope Science Institute	[A228]
Ms. Faith Abney	Space Telescope Science Institute	[A228]
Ms. Lucy Abramyan	NASA Jet Propulsion Laboratory	[A383]
Mr. Arden Acord	NASA Jet Propulsion Laboratory	[A385]
Dr. Jaime Acosta	University of Puerto Rico at Mayagüez	[A186]
Mr. Chuck Acton	NASA Jet Propulsion Laboratory	[A383, A387]
Dr. Mario Acuna	NASA Goddard Space Flight Center	[A115]
Dr. Mitzi Adams	NASA Marshall Space Flight Center	[A24, A210]
Mr. Dave Adler	Space Telescope Science Institute	[A228]
Ms. Elizabeth Adler	Tufts University	[A148]
Mr. Mark Adler	NASA Jet Propulsion Laboratory	[A455]
Ms. Lori Agan	Wheaton College	[A137]
Mr. David Aguilar	Harvard-Smithsonian Center for Astrophysics	[A391]
Mr. Joe Aguirre	NASA Jet Propulsion Laboratory	[A385]
Dr. Syun-Ichi Akasofu	International Arctic Research Center	[A274]
Ms. Cindy Alarcon-Rivera	NASA Jet Propulsion Laboratory	[A384]
Ms. Lucy Albert	Space Telescope Science Institute	[A103, A228]
Dr. Claudia Alexander	NASA Jet Propulsion Laboratory	[A232, A235]
Dr. David Alexander	Lockheed Martin Solar and Astrophysics Lab	[A141, A232, A416]
Mr. Bryan Allen	NASA Jet Propulsion Laboratory	[A383]
Dr. Carlton Allen	NASA Johnson Space Center	[A44, A65, A158, A176, A192, A221, A242, A279, A383]
Ms. Jaclyn Allen	Lockheed Martin Corporation	[A44, A65, A158, A176, A190, A192, A242, A282, A383]
Dr. John Allen	NASA Goddard Space Flight Center	[A277]
Mr. Michael Allen	Washington State University	[A141]
Dr. Richard Alley	Pennsylvania State University	[A235]
Mr. Scott Allison	Arizona State University	[A176]
Mr. Jose Alonso	University of Puerto Rico at Mayagüez	[A203]
Dr. Richard Alvidrez	NASA Jet Propulsion Laboratory	[A73, A183, A184, A422]
Ms. Elizabeth Amini	NASA Jet Propulsion Laboratory	[A65]
Dr. Bob Anderson	NASA Jet Propulsion Laboratory	[A30, A33, A176, A383, A384]
Mr. Ed Anderson	Northern Arizona University	[A165]
Ms. Jennifer Anderson	Brown University	[A141]
Dr. Paul Andres	NASA Jet Propulsion Laboratory	[A31]
Dr. Vassilis Angelopoulos	University of California, Berkeley	[A236]
Ms. Andrea Angrum	NASA Jet Propulsion Laboratory	[A421, A449]
Mr. Julian Antolin	University of Texas at El Paso	[A47]
Mr. Jessie Antonellis	University of Arizona	[A74, A141]
Dr. Michael Arida	NASA Goddard Space Flight Center	[A135]
Dr. Raymond Arvidson	Washington University	[A176, A232, A279, A387]

Dr. Maha Ashour-Abdalla	University of California, Los Angeles	[A130]
Ms. Shari Asplund	NASA Jet Propulsion Laboratory	[A310, A355, A400, A421]
Dr. Ghassam Asrar	NASA Office of Earth Science	[A141]
Mr. David Atkinson	NASA Jet Propulsion Laboratory	[A383]
Dr. Daniel Atschuler	Arecibo Observatory	[A203]
Dr. Sherman Austin	CUNY Medgar Evers College	[A51, A80]
Dr. Susan Avery	University of Colorado, Boulder	[A141]
Mr. Ron Baalke	NASA Jet Propulsion Laboratory	[A385]
Dr. Paul Backes	NASA Jet Propulsion Laboratory	[A383]
Dr. Dana Backman	NASA Ames Research Center	[A144, A194, A334, A338, A456, A472, A473]
Mr. Jim Baer	Ball Aerospace Technologies Corporation	[A358]
Mr. Enrique Baez	NASA Jet Propulsion Laboratory	[A383]
Dr. Fred Baganoff	Massachusetts Institute of Technology	[A249]
Mr. Blaine Baggett	NASA Jet Propulsion Laboratory	[A383, A384, A421]
Mr. Erik Bailey	NASA Jet Propulsion Laboratory	[A383]
Dr. Scott Bailey	Hampton University	[A303]
Mr. Darren Baird	NASA Jet Propulsion Laboratory	[A383]
Ms. Cheryl Baker	NASA Jet Propulsion Laboratory	[A383]
Dr. Dan Baker	University of Colorado, Boulder	[A141]
Mr. John Baker	Lockheed Martin Space Systems	[A385]
Ms. Alice Baldridge	Arizona State University	[A455]
Dr. Sally Baliunas	Harvard-Smithsonian Center for Astrophysics	[A391]
Dr. Joshua Bandfield	NASA Goddard Space Flight Center	[A176, A280]
Dr. Bruce Banerdt	NASA Jet Propulsion Laboratory	[A383]
Mr. Don Banfield	Cornell University	[A455]
Ms. Jacqueline Barber	University of California, Berkeley	[A236]
Mr. Todd Barber	NASA Jet Propulsion Laboratory	[A383, A384, A387]
Dr. Louis Barbier	NASA Goddard Space Flight Center	[A299, A405]
Dr. Nadine Barlow	University of Central Florida	[A17]
Ms. Chikia Barnes	NASA Goddard Space Flight Center	[A425]
Dr. Robin Barnes	Johns Hopkins University	[A274]
Ms. Lynn Barranger	Space Telescope Science Institute	[A228]
Ms. Lindsay Bartolone	Adler Planetarium and Astronomy Museum	[A141, A143, A329, A417, A464]
Dr. Gibor Basri	University of California, Berkeley	[A1, A213, A274, A449]
Dr. Deborah Bass	NASA Jet Propulsion Laboratory	[A383, A384, A455]
Dr. James Bauer	NASA Jet Propulsion Laboratory	[A209]
Mr. Todd Bayer	NASA Jet Propulsion Laboratory	[A385]
Ms. Ruth Bazinet	Harvard-Smithsonian Center for Astrophysics	[A348]
Mr. Kevin Beals	University of California, Berkeley	[A205, A236]
Ms. Marita Beard	SETI Institute	[A194, A334]
Dr. Dave Beaty	NASA Jet Propulsion Laboratory	[A383, A387]
Mr. John Beck	NASA Jet Propulsion Laboratory	[A271, A455]
Dr. John Beck	Stanford University	[A420]
Dr. Bernhard Beck-Winchatz	DePaul University	[A62, A63, A76, A80, A136, A177, A197, A433, A434]
Mr. Luke Becker	Johns Hopkins Applied Physics Laboratory	[A298]
Dr. Eric Becklin	NASA Ames Research Center	[A334]
Ms. Claudette Beggs	NASA Kennedy Space Center	[A383]
Dr. Alberto Behar	NASA Jet Propulsion Laboratory	[A232]
Dr. Peter Beiersdorfer	Lawrence Livermore National Laboratory	[A46]
Ms. Kerri Beisser	Johns Hopkins Applied Physics Laboratory	[A232, A298]
Dr. Jim Bell	Cornell University	[A17, A176, A255]
Dr. Paul (Major) Bellaire	U.S. Air Force	[A274]
Dr. Carmen Bellido	University of Puerto Rico at Mayagüez	[A186]

Ms. Kelly Bender	Arizona State University	[A282]
Dr. Robert Benjamin	University of Wisconsin-Whitewater	[A340]
Mr. Boonsieng Benjauthrit	NASA Jet Propulsion Laboratory	[A383]
Mr. Ed Bennett	NASA Jet Propulsion Laboratory	[A387]
Mr. Michael Bennett	Astronomical Society of the Pacific	[A128, A144, A194, A241, A304, A338, A429, A433, A472, A473]
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Mr. Lincoln Bergman	University of California, Berkeley	[A236]
Ms. Alice Berman	Johns Hopkins University	[A228]
Mr. Bob Berry	Lockheed Martin Space Systems	[A385]
Dr. Ken Berry	NASA Jet Propulsion Laboratory	[A176, A383, A384]
Dr. Max Bernstein	SETI Institute	[A36]
Ms. Laura Berwin	NASA Jet Propulsion Laboratory	[A385]
Dr. Manfred Bester	University of California, Berkeley	[A191, A411, A415]
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Dr. W. Robert Binns	Washington University	[A258, A332]
Dr. Fernando Bird-Picó	University of Puerto Rico at Mayagüez	[A172]
Mr. Gaj Birur	NASA Jet Propulsion Laboratory	[A384]
Dr. David Black	Lunar and Planetary Institute	[A195]
Mr. David Black	Mountainland Applied Technology College	[A195]
Mr. Brett Blacker	Space Telescope Science Institute	[A228]
Mr. Derek Blackway	NASA Jet Propulsion Laboratory	[A383, A385, A421]
Dr. William Blair	Johns Hopkins University	[A407]
Dr. Roger Blandford	California Institute of Technology	[A347]
Mr. Eric Bloemhof	NASA Jet Propulsion Laboratory	[A294]
Mr. Ron Blom	NASA Jet Propulsion Laboratory	[A179]
Mr. Charles Bluehawk	California Institute of Technology	[A315, A441, A442, A475]
Dr. Baruch Blumburg	Fox Chase Cancer Center	[A392]
Mr. William Blume	NASA Jet Propulsion Laboratory	[A152, A422]
Dr. Matthew Bobrowsky	Challenger Center for Space Science Education	[A66]
Dr. Donald Bogard	NASA Johnson Space Center	[A158, A176]
Dr. J. David Bohlin	NASA Office of Space Science	[A63, A458]
Ms. Diane Bollen	Cornell University	[A455]
Dr. Scott Bolton	NASA Jet Propulsion Laboratory	[A261]
Mr. Bruce Bon	NASA Jet Propulsion Laboratory	[A387]
Dr. Howard Bond	Space Telescope Science Institute	[A134]
Mr. Kirk Borne	Space Telescope Science Institute	[A228]
Mr. Cory Borst	NASA Jet Propulsion Laboratory	[A385]
Ms. Alice Bowman	Johns Hopkins Applied Physics Laboratory	[A298, A324]
Dr. Arthur Bowman	Hampton University	[A141]
Ms. Cassie Bowman	NASA Ames Research Center	[A176, A279, A385]
Mr. Bob Boyer	Space Telescope Science Institute	[A228]
Mr. Kobie Boykins	NASA Jet Propulsion Laboratory	[A383]
Dr. Bill Boynton	University of Arizona	[A385]
Ms. Heather Bradbury	Space Telescope Science Institute	[A103, A105, A228]
Ms. Molly Brandt	Space Telescope Science Institute	[A228]
Dr. Neil Brandt	Pennsylvania State University	[A188]
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Mr. Stephen Bridges	NASA Jet Propulsion Laboratory	[A385]
Dr. Tom Bridgman	NASA Goddard Space Flight Center	[A274]
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Dr. Steve Brody	NASA Office of Space Science	[A66, A358]
Dr. Jeffrey Brosius	NASA Goddard Space Flight Center	[A100]
Mr. Gene Brower	NASA Jet Propulsion Laboratory	[A382]
Dr. Beth Brown	NASA Goddard Space Flight Center	[A380]
Dr. Lisa Brown	Pennsylvania State University	[A190, A476]
Dr. Neal Brown	University of Alaska, Fairbanks	[A274]
Ms. Sara Brown	NASA Goddard Space Flight Center	[A172, A186, A277, A424, A425]
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Mr. Enrico Bruno	NASA Jet Propulsion Laboratory	[A383]
Mr. Robert Bruntz	University of Texas at El Paso	[A47]
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Mr. Mike Buckley	Johns Hopkins Applied Physics Laboratory	[A252, A295, A298, A324]
Dr. Scott Budzein	Naval Research Laboratory	[A66]
Dr. Royce Buehler	Massachusetts Institute of Technology	[A283]
Dr. Ratnakumar Bugga	NASA Jet Propulsion Laboratory	[A387]
Dr. Susan Buhr	University of Colorado, Boulder	[A141]
Dr. Bonnie Buratti	NASA Jet Propulsion Laboratory	[A209]
Mr. Robert Burke	NASA Jet Propulsion Laboratory	[A383, A384]
Mr. Christopher Burns	Arizona State University	[A176, A383]
Mr. Benjamin Burress	Chabot Space and Science Center	[A179]
Dr. Bobby Bus	NASA Infrared Telescope Facility	[A50]
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Dr. Benjamin Bussey	Johns Hopkins Applied Physics Laboratory	[A149]
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Dr. John Callas	NASA Jet Propulsion Laboratory	[A176, A383, A386, A455]
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Mr. Tom Campbell	South Dakota School of Mines and Technology	[A176]
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Mr. Michael Carlowicz	NASA Goddard Space Flight Center	[A274]
Dr. Scott Carpenter	NASA Jet Propulsion Laboratory	[A387]
Dr. Michael Carr	U.S. Geological Survey	[A17]
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Mr. Joseph Catanzarite	NASA Jet Propulsion Laboratory	[A73]
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Mr. Robert Cesarone	NASA Jet Propulsion Laboratory	[A359]

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Dr. Eric Chaisson	Tufts University	[A137, A148]
Dr. Deepto Chakrabarty	Massachusetts Institute of Technology	[A249]
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Dr. Peter Challis	Harvard-Smithsonian Center for Astrophysics	[A9]
Dr. Lin Chambers	NASA Langley Research Center	[A233]
Dr. Franklin Chang-Diaz	NASA Johnson Space Center	[A274]
Dr. Hui Chen	Lawrence Livermore National Laboratory	[A46]
Dr. Andrew Cheng	Johns Hopkins Applied Physics Laboratory	[A232, A235, A298]
Dr. Michael Cherry	Louisiana State University	[A52]
Dr. Tak Cheung	CUNY Queensborough Community College	[A51]
Ms. Natacha Chough	NASA Jet Propulsion Laboratory	[A33]
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Ms. Cathleen Clemens	Museum of Science	[A137, A185, A296, A297, A410, A432, A470]
Dr. Dan Clemens	Boston University	[A296]
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Dr. Paul Coleman	University of Hawaii at Manoa	[A50]
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Mr. Steve Collins	NASA Jet Propulsion Laboratory	[A383, A455]
Ms. Jessica Collisson	NASA Jet Propulsion Laboratory	[A281, A382, A385, A455]
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Dr. Mark Conde	University of Alaska, Fairbanks	[A274]
Mr. Gerald Condon	NASA Johnson Space Center	[A387]
Mr. Tom Connolly	NASA Wallops Flight Facility	[A274]
Dr. Guy Consolmagno	University of Arizona	[A353]
Ms. Amanda Cook	NASA Goddard Space Flight Center	[A146, A170, A217]
Mr. Richard Cook	NASA Jet Propulsion Laboratory	[A455]
Mr. Walter Cook	California Institute of Technology	[A245]
Ms. Denise Cook-Clampert	Ball Aerospace Technologies Corporation	[A358]
Dr. Adrienne Cool	San Francisco State University	[A206]
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Dr. Donald Cotten	CUNY Queensborough Community College	[A51]
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Ms. Rose Craig	University of California, Berkeley	[A236]
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Dr. Kyle Cudworth	University of Chicago	[A62, A76]
Mr. Harry Culver	NASA Goddard Space Flight Center	[A308]
Dr. Jim Cutts	NASA Jet Propulsion Laboratory	[A385]
Dr. Louis D'Amario	NASA Jet Propulsion Laboratory	[A387]
Dr. George Dakermanji	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Sandra Daly	Harvard-Smithsonian Center for Astrophysics	[A417]
Dr. Rudolf Danner	NASA Jet Propulsion Laboratory	[A73, A422]
Ms. Doris Daou	California Institute of Technology	[A128, A141, A144, A201, A315, A441, A442, A475]
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Dr. Jacqueline Davidson	Universities Space Research Association	[A304, A334]
Mr. Albert Davison	NASA Goddard Space Flight Center	[A205, A319]
Ms. Sandra Dawson	NASA Jet Propulsion Laboratory	[A383, A422]
Dr. Craig De Forest	Southwest Research Institute	[A232, A235]
Dr. Eric De Jong	NASA Jet Propulsion Laboratory	[A31, A232, A385]
Dr. Paulo de Souza	Johannes Gutenberg University	[A279]
Mr. Nicholas Deamer	Tufts University	[A148]
Dr. Chuck Deehr	University of Alaska, Fairbanks	[A274]
Dr. Gregory Delory	University of California, Berkeley	[A268]
Dr. Edward DeLuca	Harvard-Smithsonian Center for Astrophysics	[A141]
Ms. Dina Demara	Ball Aerospace Technologies Corporation	[A358]
Dr. Brian Dennis	NASA Goddard Space Flight Center	[A51]
Dr. Georgia DeNolfo	NASA Goddard Space Flight Center	[A135, A193]
Dr. Bart DePontieu	Lockheed Martin Solar and Astrophysics Lab	[A213]
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Dr. David Des Marais	NASA Ames Research Center	[A36, A392]
Dr. Yasmin Detrès	University of Puerto Rico at Mayagüez	[A186, A203]
Dr. Rebecca Deutscher	Lewis Center for Educational Research	[A161]
Ms. Edna DeVore	SETI Institute	[A128, A144, A194, A241, A338, A429, A472, A473]
Mr. Kaichang Di	Ohio State University	[A387]
Dr. Steven Dick	U.S. Naval Observatory	[A470]
Mr. Bill Diener	NASA Jet Propulsion Laboratory	[A383]
Mr. James Diener	NASA Jet Propulsion Laboratory	[A282, A383]
Dr. Ann Dinger	NASA Ames Research Center	[A334]
Ms. Cynthia Dinwiddie	Southwest Research Institute	[A387]

Dr. Mike DiPirro	NASA Goddard Space Flight Center	[A277]
Dr. Roseanne DiStefano	Tufts University	[A248]
Dr. Charles Dobson	Howard University	[A66]
Ms. Patricia Dobson	University of California, Berkeley	[A349]
Mr. Andras Dombvari	Arizona State University	[A280]
Dr. R. Hank Donnelly	Harvard-Smithsonian Center for Astrophysics	[A185, A248, A297, A347]
Mr. David Doody	NASA Jet Propulsion Laboratory	[A383, A422]
Dr. Lyn Doose	University of Arizona	[A387]
Mr. Michael Doucette	Massachusetts Institute of Technology	[A283]
Mr. Scott Doudrick	NASA Jet Propulsion Laboratory	[A383, A384]
Mr. Andrew Downen	NASA Jet Propulsion Laboratory	[A359]
Ms. Isidoros Doxas	University of Colorado, Boulder	[A198]
Dr. Rodger Doxsey	Space Telescope Science Institute	[A104]
Dr. Jeremy Drake	Harvard-Smithsonian Center for Astrophysics	[A248]
Ms. Mary Drake	NASA Johnson Space Center	[A158, A192, A383]
Mr. Richard Dreiser	Yerkes Observatory	[A419]
Ms. Emilie Drobnes	NASA Goddard Space Flight Center	[A471]
Mr. Robert Duffin	NASA Goddard Space Flight Center	[A471]
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Mr. Greg Duran	NASA Jet Propulsion Laboratory	[A383]
Dr. Riley Duren	NASA Jet Propulsion Laboratory	[A251, A294]
Dr. Richard Durisen	Indiana University, Bloomington	[A222]
Dr. Paul Dusenbery	Space Science Institute	[A17, A141]
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Mr. Thomas Duxbury	NASA Jet Propulsion Laboratory	[A232]
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Ms. Karen Edgerly	University of Colorado, Boulder	[A141]
Dr. Ken Edgett	Malin Space Science Systems	[A17, A176, A385]
Dr. Peter Edmonds	Harvard-Smithsonian Center for Astrophysics	[A347]
Mr. Bobby Edwards	Space Telescope Science Institute	[A228]
Dr. Chad Edwards	NASA Jet Propulsion Laboratory	[A383]
Ms. Christy Edwards	Space Science Institute	[A74, A198]
Ms. Emily Eelkema	NASA Jet Propulsion Laboratory	[A382, A387]
Mr. Howard Eisen	NASA Jet Propulsion Laboratory	[A387]
Ms. Bonnie Eisenhamer	Space Telescope Science Institute	[A82, A83, A84, A85, A87, A103, A105, A128, A228]
Mr. Jonathan Eisenhamer	Space Telescope Science Institute	[A103]
Dr. Ifeanyi Ekejiuba	CUNY Medgar Evers College	[A51]
Dr. Ronald Elsner	NASA Marshall Space Flight Center	[A210]
Dr. Martin Elvis	Harvard-Smithsonian Center for Astrophysics	[A148]
Mr. Gary Emerson	Ball Aerospace Technologies Corporation	[A358]
Ms. Heather Enos	University of Arizona	[A385]
Mr. Mike Ensminger	Ball Aerospace Technologies Corporation	[A358]
Dr. Rob Eppler	Swales Aerospace	[A66]
Dr. Ari Epstein	Massachusetts Institute of Technology	[A284]
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Mr. John Erickson	University of California, Berkeley	[A206, A236]
Dr. Aprille Ericsson	NASA Goddard Space Flight Center	[A66]
Dr. Robert Erlandson	Johns Hopkins Applied Physics Laboratory	[A324]
Dr. Philippe Escoubet	European Space Agency Research and Technology Centre	[A47]
Mr. Bart Estes	Holyoke Community College	[A51]

Mr. Tom Estill	Chabot Space and Science Center	[A160, A169, A204, A218, A383]
Mr. Shar Etemad	Swales Aerospace	[A228]
Dr. Eugenia Etkina	Rutgers University	[A148]
Dr. Francis Everitt	Stanford University	[A157]
Ms. Paula Everson	NASA Goddard Space Flight Center	[A308]
Mr. Brian Ewenson	Lockheed Martin Corporation	[A422]
Dr. Guiseppina Fabbiano	Harvard-Smithsonian Center for Astrophysics	[A248]
Dr. Emilio Falco	Harvard-Smithsonian Center for Astrophysics	[A9]
Mr. Peter Falcon	NASA Jet Propulsion Laboratory	[A384]
Dr. Jack Farmer	Arizona State University	[A176, A219, A392]
Dr. James Farquhar	University of Maryland	[A235]
Dr. William Farrand	Space Science Institute	[A279, A387]
Mr. Jeff Favretto	NASA Jet Propulsion Laboratory	[A383]
Dr. Eric Feigelson	Pennsylvania State University	[A169, A188]
Dr. Walt Feimer	NASA Goddard Space Flight Center	[A274]
Ms. Sally Feldman	University of California, Berkeley	[A186]
Dr. William Feldman	Los Alamos National Laboratory	[A174, A385]
Dr. Evelina Félicité-Maurice	NASA Goddard Space Flight Center	[A171, A172, A173, A186, A424, A425]
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Karl Fielhauer	Johns Hopkins Applied Physics Laboratory	[A324]
Ms. Frances Figarella	University of Puerto Rico at Rio Piedras	[A172]
Mr. Orlando Figueroa	NASA Office of Space Science	[A33, A136, A176, A455]
Mr. Ramon Figueroa	University of Texas at El Paso	[A47]
Dr. Brad Files	NASA Johnson Space Center	[A66]
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Ms. M. Constance Finney	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Diane Fisher	NASA Jet Propulsion Laboratory	[A335, A351, A430, A431, A453]
Dr. George Fisher	University of California, Berkeley	[A179, A236]
Dr. Richard Fisher	NASA Goddard Space Flight Center	[A141, A236]
Dr. Scott Fisher	Gemini Observatory	[A50]
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Dr. Bernard Fleck	NASA Goddard Space Flight Center	[A274]
Mr. Tim Flora	Ball Aerospace Technologies Corporation	[A358]
Mr. John Flores	NASA Jet Propulsion Laboratory	[A383]
Mr. Dominic Florin	Ball Aerospace Technologies Corporation	[A358]
Dr. John Flowers	CUNY Medgar Evers College	[A51]
Ms. Xaviant Ford	NASA Jet Propulsion Laboratory	[A385]
Ms. Terri Formico	NASA Jet Propulsion Laboratory	[A384]
Dr. Lucy Fortson	Adler Planetarium and Astronomy Museum	[A80]
Dr. Susan Foster	National Center for Atmospheric Research	[A141]
Dr. Wallace Fowler	Texas Space Grant Consortium	[A167]
Dr. Nicola Fox	NASA Goddard Space Flight Center	[A19, A232, A274, A298, A319, A401, A449]
Mr. Laurence Frank	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Zoe Frank	Lockheed Martin Solar and Astrophysics Lab	[A457]
Ms. Lisa Frattare	Space Telescope Science Institute	[A228]
Mr. Doug Frazier	Ball Aerospace Technologies Corporation	[A358]
Ms. Amy Fredericks	Massachusetts Institute of Technology	[A249, A283, A284, A390]
Mr. Art Freiley	NASA Jet Propulsion Laboratory	[A162]
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Dr. Jeffrey Friedman	University of California, Berkeley	[A109]
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Mr. Matt Froment	NASA Jet Propulsion Laboratory	[A384]
Dr. James Frost	CUNY LaGuardia Community College	[A51]
Dr. Andrew Fruchter	Space Telescope Science Institute	[A370]
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Dr. Bryan Gaensler	Harvard University	[A249]
Ms. Deborah Gage	Massachusetts Institute of Technology	[A283]
Mr. Charles Galindo	NASA Johnson Space Center	[A44, A80, A158, A176, A383]
Mr. Peter Gallagher	NASA Goddard Space Flight Center	[A471]
Dr. Sarah Gallagher	Massachusetts Institute of Technology	[A249, A283, A284]
Mr. Anthony Ganino	NASA Jet Propulsion Laboratory	[A387]
Mr. Ray Garcia	NASA Jet Propulsion Laboratory	[A383]
Mr. Francis Gardner	Columbus State University	[A195]
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Dr. Jim Garvin	NASA Office of Space Science	[A176, A383, A455]
Dr. Peter Gary	Los Alamos National Laboratory	[A196]
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Dr. Adrienne Gauthier	University of Arizona	[A473]
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Dr. Neil Gehrels	NASA Goddard Space Flight Center	[A254, A322, A365, A451]
Mr. Timothy Geipe	Johns Hopkins Applied Physics Laboratory	[A298]
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Dr. Harold Geller	George Mason University	[A66]
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Ms. Saina Ghandchi	NASA Jet Propulsion Laboratory	[A282, A387]
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Mr. Tracy Gibb	NASA Wallops Flight Facility	[A274]
Mr. Roger Gibbs	NASA Jet Propulsion Laboratory	[A383, A385]
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Dr. Barbara Giles	NASA Goddard Space Flight Center	[A274]
Dr. Owen Gingerich	Harvard-Smithsonian Center for Astrophysics	[A8, A9]
Mr. Joseph Girard	Ball Aerospace Technologies Corporation	[A358]
Mr. Roy Gladden	NASA Jet Propulsion Laboratory	[A387]
Mr. David Glaser	University of California, Berkeley	[A236]
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Mr. Tim Glotch	Arizona State University	[A280, A282, A384, A455]
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Dr. Robert Gold	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Tatiana Goldina	California Institute of Technology	[A314]
Dr. Jeffrey Goldstein	Challenger Center for Space Science Education	[A66]
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Dr. Michael Golightly	NASA Johnson Space Center	[A274]
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Mr. Eddie Gonzales	NASA Jet Propulsion Laboratory	[A421]
Dr. Juan Gonzalez	University of Puerto Rico at Mayagüez	[A186, A203]
Mr. Kirk Goodall	NASA Jet Propulsion Laboratory	[A385]
Ms. Alyssa Goodman	Yale University	[A391]
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Dr. Varoujan Gorjian	NASA Jet Propulsion Laboratory	[A263]
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Dr. Roy Gould	Harvard-Smithsonian Center for Astrophysics	[A4, A139, A231, A391, A417]
Dr. Bala Govindasamy	Lawrence Livermore National Laboratory	[A56]
Dr. Carol Grady	NASA Goddard Space Flight Center	[A101]
Mr. Jim Graf	NASA Jet Propulsion Laboratory	[A175, A176, A280, A382, A383, A385]
Mr. Trevor Graff	Arizona State University	[A176, A383, A455]
Ms. Eva Graham	NASA Jet Propulsion Laboratory	[A422]
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Mr. Tim Graves	Sonoma State University	[A169, A254, A365, A451]
Dr. Kevin Grazier	NASA Jet Propulsion Laboratory	[A66]
Dr. Ronald Greeley	Arizona State University	[A219, A387]
Dr. James Green	NASA Goddard Space Flight Center	[A274, A319]
Dr. Steve Greenbaum	CUNY Hunter College	[A51]
Mr. W. Michael Greene	NASA Jet Propulsion Laboratory	[A128, A421, A422]
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Dr. John Grotzinger	Massachusetts Institute of Technology	[A387]
Ms. Quin Gryce	Space Telescope Science Institute	[A228]
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Mr. Jose Guzman	NASA Jet Propulsion Laboratory	[A455]
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Dr. Frank Hall	American Geophysical Union	[A141]
Dr. Gerald Halpert	NASA Jet Propulsion Laboratory	[A387]
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Dr. Salman Hameed	Smith College	[A185, A410]
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Dr. Vicky Hamilton	Arizona State University	[A175]
Dr. Heidi Hammel	Space Science Institute	[A141, A264]
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Dr. Martha Hanner	NASA Jet Propulsion Laboratory	[A370]
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Dr. Isabel Hawkins	University of California, Berkeley	[A96, A109, A141, A206, A236, A274, A414, A415, A448, A449]
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Mr. Salvador Hernandez	University of Texas at El Paso	[A47]
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Dr. Rocky Kolb	Fermi National Accelerator Laboratory	[A9]
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Ms. Kimberly Kowal	Harvard-Smithsonian Center for Astrophysics	[A148, A347]
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Mr. Da Kuang	NASA Jet Propulsion Laboratory.	[A383]
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Dr. Rolf Kudritzki	University of Hawaii at Manoa	[A50]
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Ms. Kelliann LaConte	California Institute of Technology	[A141]
Ms. Christine Lafon	Harvard-Smithsonian Center for Astrophysics	[A348]
Mr. Geoffrey Lake	NASA Jet Propulsion Laboratory.	[A382, A387]
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Ms. Barbara Lambert	NASA Goddard Space Flight Center	[A205, A206, A308, A319, A471]
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Dr. Edward Landa	U.S. Geological Survey	[A66]
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Dr. Michael Lawrence	Rutgers University	[A148]
Ms. Zoe Learner	Cornell University	[A387]
Dr. James Leary	Johns Hopkins Applied Physics Laboratory.	[A51]
Ms. Sara Leavitt	University of California, Berkeley	[A236]

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Dr. Julia Lee	Massachusetts Institute of Technology	[A249]
Dr. Steve Lee	University of Colorado, Boulder	[A17]
Dr. Wayne Lee	NASA Jet Propulsion Laboratory	[A80, A232, A235, A455]
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Mr. George Leonberger	Tufts University	[A148]
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Dr. Laurie Leshin	Arizona State University	[A176]
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Dr. Steven Levin	NASA Jet Propulsion Laboratory	[A263]
Dr. Arlene Levine	NASA Langley Research Center	[A126]
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Ms. Elaine Lewis	NASA Goddard Space Flight Center	[A205, A206, A236, A274, A309, A319, A415, A420, A422, A448]
Mr. Jeff Lewis	Lockheed Martin Space Systems	[A385]
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Dr. Giselher Lichti	Max-Planck-Institut für Physik	[A365]
Ms. Kim Lievense	NASA Jet Propulsion Laboratory	[A383, A385]
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Ms. Teresa Longazo	Hernandez Engineering, Inc	[A242]
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Dr. Sera Markoff	Massachusetts Institute of Technology	[A249, A283]
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Dr. Herman Marshall	Massachusetts Institute of Technology	[A249, A283, A284]
Ms. Jennifer Marshall	Ohio State University	[A50]
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Dr. Jeffrey McClintock	Harvard-Smithsonian Center for Astrophysics	[A248]
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Dr. Jonathan McDowell	Harvard-Smithsonian Center for Astrophysics	[A284, A391]
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Dr. Nathan Miller	University of Wisconsin-Eau Claire	[A331]
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Dr. Ada Monzón	Univision Puerto Rico Meteorology	[A172, A203]
Dr. Raquel Morales	Harvard-Smithsonian Center for Astrophysics	[A185, A283, A284, A432]
Mr. Satoshi Morita	NASA Goddard Space Flight Center	[A471]
Dr. Richard Morris	NASA Johnson Space Center	[A158, A176]
Dr. Vernon Morris	Howard University	[A66]
Dr. Penny Morris-Smith	University of Houston-Downtown	[A44, A51, A80, A192]
Mr. Andy Morrison	NASA Jet Propulsion Laboratory	[A383]
Dr. Nancy Morrison	University of Toledo	[A163]
Dr. Cherilynn Morrow	Space Science Institute	[A74, A80, A141, A185, A198, A376, A416, A470]
Mr. Paul Mortfield	Stanford University	[A319, A420]
Ms. Andrea Mosie	NASA Johnson Space Center	[A44, A158, A176, A242]
Dr. Jeremy Mould	National Optical Astronomy Observatory	[A141]
Mr. Jim Mowat	Ball Aerospace Technologies Corporation	[A358]
Mr. Jason Muckenthaler	NASA Jet Propulsion Laboratory	[A383]
Mr. Koji Mukai	NASA Goddard Space Flight Center	[A135, A332]

Mr. Peter Mule	NASA Goddard Space Flight Center	[A308]
Mr. T. J. Mulich, Jr.	Johns Hopkins Applied Physics Laboratory.	[A298]
Dr. Jennifer Mullins	Stanford University	[A9]
Ms. Mary Mulvanerton	Cornell University	[A176]
Dr. Edward Murphy	University of Virginia.	[A18]
Mr. Scott Murphy	NASA Goddard Space Flight Center	[A301]
Ms. Kim Murray	Arizona State University	[A280]
Dr. Stephen Murray	Harvard-Smithsonian Center for Astrophysics	[A9, A248, A284, A347]
Mr. Max Mutchler	Space Telescope Science Institute	[A105, A228]
Dr. Dawn Myers	NASA Goddard Space Flight Center	[A471]
Dr. Tom Myrick	Honeybee Robotics, Ltd.	[A176, A455]
Mr. Tom Myrick	NASA Jet Propulsion Laboratory.	[A455]
Dr. Jay Nadeau	NASA Jet Propulsion Laboratory.	[A22]
Dr. Firouz Naderi	NASA Jet Propulsion Laboratory.	[A176, A383]
Dr. Nitin Naik	Wheeling Jesuit University	[A402]
Mr. Neil Nakamoto	NASA Jet Propulsion Laboratory.	[A385]
Dr. Carolyn Narasimhan	DePaul University	[A51, A136, A197]
Mr. Pablo Narvaez	NASA Jet Propulsion Laboratory.	[A383]
Dr. Kenneth Nealson	NASA Jet Propulsion Laboratory.	[A232, A235]
Mr. George Nelson	NASA Jet Propulsion Laboratory.	[A141]
Ms. Jane Neuenschwander	Wheeling Jesuit University	[A463]
Dr. Greg Neumann	NASA Goddard Space Flight Center	[A17]
Dr. Horton Newsom	University of New Mexico.	[A219]
Mr. Weldon Newton	Space Telescope Science Institute	[A228]
Ms. Carolyn Ng	NASA Goddard Space Flight Center	[A19, A65, A66, A79, A236, A274, A415, A416, A448, A476]
Ms. Lisa Nguyen	NASA Jet Propulsion Laboratory.	[A384]
Mr. Quyen Nguyen	NASA Jet Propulsion Laboratory.	[A384]
Mr. Tam Nguyen	NASA Jet Propulsion Laboratory.	[A383]
Mr. Ted Nichols II	Johns Hopkins Applied Physics Laboratory.	[A298, A404]
Mr. Michael Nieto	NASA Jet Propulsion Laboratory.	[A282, A383]
Dr. Eldar Noe Dorea	Cornell University	[A387]
Mr. Jacob Noel-Storr	Columbia University	[A228]
Dr. Tom Nolan	NASA Jet Propulsion Laboratory.	[A233, A385]
Dr. John Nousek	Pennsylvania State University.	[A188]
Mr. Keith Novak	NASA Jet Propulsion Laboratory.	[A387]
Mr. Paul Novak	The Boeing Company	[A383]
Mr. Scott Nowicki	Arizona State University	[A175, A176, A280]
Mr. Bill Nye	Cornell University	[A80, A176, A271, A455]
Dr. Robert O'Connell	University of Virginia.	[A18]
Dr. Kathleen O'Sullivan	San Francisco State University	[A205, A206, A236]
Dr. Victor Obot	Texas Southern University	[A44]
Ms. Dorice Odell	NASA Jet Propulsion Laboratory.	[A253, A383]
Mr. Stephen Oden	Johns Hopkins Applied Physics Laboratory.	[A298]
Dr. Sten Odenwald	NASA Goddard Space Flight Center	[A19, A110, A111, A122, A236, A270, A274, A319, A373, A374, A375, A401, A407, A416, A448, A449]
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Mr. Eric Olds	Swales Aerospace	[A387]
Dr. Lorraine Olendzenski	Marine Biological Laboratory	[A190]
Ms. Yolanda Oliver	NASA Jet Propulsion Laboratory.	[A383]
Dr. Ronald Oliverson	NASA Goddard Space Flight Center	[A78]
Dr. Jonathan Ormes	NASA Goddard Space Flight Center	[A52]
Dr. Daniel Osborne	University of Alaska, Fairbanks.	[A274]

Mr. Scott Owens	NASA Goddard Space Flight Center	[A193]
Ms. Ruth Paglierani	University of California, Berkeley	[A63, A186, A205, A206, A236, A305, A309, A414, A415, A416, A449]
Mr. Frank Palluconi	NASA Jet Propulsion Laboratory	[A385]
Dr. Christopher Palma	Pennsylvania State University	[A188]
Dr. E. Samuel Palmer	Harvard-Smithsonian Center for Astrophysics	[A9, A337]
Dr. Thomas Pannuti	Massachusetts Institute of Technology	[A249, A284, A390]
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Mr. Greg Parillo	NASA Jet Propulsion Laboratory	[A385]
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Ms. Darlene Park	University of California, Berkeley	[A191, A206, A305, A415, A449]
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Ms. Heather Parsons	NASA Jet Propulsion Laboratory	[A387]
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Mr. Rino Passaniti	NASA Jet Propulsion Laboratory	[A271, A383, A385]
Dr. Richard Patterson	University of Virginia	[A18]
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Dr. Larry Paxton	Johns Hopkins University	[A274]
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Mr. Chris Peterson	University of Hawaii at Manoa	[A275]
Dr. Laura Peticolas	University of California, Berkeley	[A141, A191, A250, A257, A274, A309, A415, A449]
Dr. Robert Pfaff	NASA Goddard Space Flight Center	[A274]
Ms. Angela Phelps	Pennsylvania State University	[A190]
Ms. Alice Phinney	Ball Aerospace Technologies Corporation	[A358]
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Ms. Donna Pierce	University of Maryland	[A358]
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Dr. Jeffrey Plaut	NASA Jet Propulsion Laboratory	[A382, A383, A385, A387]
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Mr. Robert Polansky	NASA Jet Propulsion Laboratory	[A359]
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Mr. Peter Poon	NASA Jet Propulsion Laboratory	[A387]
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Mr. Erik Pounders	NASA Jet Propulsion Laboratory	[A385]
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Dr. Preethi Pratap	Massachusetts Institute of Technology	[A284, A390]
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Ms. Leslie Proudfit	NASA Ames Research Center	[A241, A334, A429, A472]
Dr. Wayne Pryor	Central Arizona Community College	[A55]
Mr. Tommy Purer	NASA Jet Propulsion Laboratory	[A383]
Mr. Megan Quigley	NASA Jet Propulsion Laboratory	[A383]
Dr. Isabel Quita	San Francisco State University	[A205]
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Dr. Brian Ramsey	NASA Marshall Space Flight Center	[A24]
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Dr. Carol Raymond	NASA Jet Propulsion Laboratory	[A383]
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Dr. Kennedy Reed	Lawrence Livermore National Laboratory	[A46]
Dr. Neill Reid	Space Telescope Science Institute	[A407]
Dr. Patricia Reiff	Rice University	[A44, A80, A179, A274]
Ms. Erika Reinfeld	Harvard-Smithsonian Center for Astrophysics	[A417]
Ms. Lorraine Remer	NASA Goddard Space Flight Center	[A233]
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Ms. Carole Rest	Space Telescope Science Institute	[A179, A228]
Ms. Patti Rhee	NASA Jet Propulsion Laboratory	[A421, A422]
Dr. Jim Rice	Arizona State University	[A280, A383, A455]
Ms. Kathe Rich	University of Alaska, Fairbanks	[A274]
Ms. Angela Richard	University of Michigan	[A246]
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Dr. Art Richmond	University Corporation for Atmospheric Research	[A182, A237]
Dr. Reed Riddle	Iowa State University	[A50]
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Mr. Tommaso Rivellini	NASA Jet Propulsion Laboratory	[A455]
Dr. Massimo Robborto	Space Telescope Science Institute	[A407]
Mr. Irving Robbins	College of Staten Island	[A51]
Mr. Bruce Roberts	Harvard-Smithsonian Center for Astrophysics	[A283, A345, A390]
Dr. Doug Roberts	Adler Planetarium and Astronomy Museum	[A80]
Dr. Mark Robinson	Northwestern University	[A136]
Mr. Donald Robinson-Boonstra	NASA Goddard Space Flight Center	[A205, A206, A277, A309, A319]
Mr. Juan Rodriguez	University of Texas at El Paso	[A47]
Mr. Anthony Rogers	Space Telescope Science Institute	[A228]
Ms. Deanne Rogers	Arizona State University	[A280]
Ms. Gail Rohrbach	NASA Goddard Space Flight Center	[A135, A416]
Dr. Nancy Grace Roman	Retired	[A66]
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Mr. Guilio Rosanova	NASA Goddard Space Flight Center	[A307]
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Dr. Cynthia Rosensweig	NASA Goddard Institute for Space Studies	[A235]
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Ms. Maura Rountree-Brown	NASA Jet Propulsion Laboratory	[A152, A358, A421, A422]
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Ms. Tania Ruiz	Museum of Science	[A10, A249, A337, A432]
Dr. Cassandra Runyon	College of Charleston	[A63, A136, A361]
Dr. Kuzmin Ruslin	Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences	[A280]
Mr. Tom Russell	ITT Industries	[A66]
Dr. James Ryan	University of New Hampshire	[A460]
Mr. Mark Ryne	NASA Jet Propulsion Laboratory	[A387]
Dr. Hartmut Sadrozinski	University of California, Santa Cruz.	[A254]
Mr. Ali Safaeinili	NASA Jet Propulsion Laboratory	[A383]
Dr. Premkumar Saganti	NASA Johnson Space Center	[A385]
Dr. Phil Sakimoto	NASA Office of Space Science	[A421]
Mr. Miguel San Martin	NASA Jet Propulsion Laboratory	[A455]
Dr. Goeran Sandell	NASA Ames Research Center	[A472]
Mr. Mike Sander	NASA Jet Propulsion Laboratory	[A383]
Mr. Andrew Santo	Johns Hopkins Applied Physics Laboratory.	[A66, A295, A324]
Mr. Willy Santos	University of Puerto Rico at Rio Piedras	[A172, A186, A230]
Ms. Cecilia Satterwhite	NASA Johnson Space Center	[A158]
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Ms. Maureen Savage	Universities Space Research Association	[A304]
Mr. Gary Savona	NASA Jet Propulsion Laboratory	[A385]
Dr. Terry Schalk	University of California, Santa Cruz.	[A254]
Dr. Terry Scharton	NASA Jet Propulsion Laboratory	[A282, A383]
Mr. Don Schatzel	NASA Jet Propulsion Laboratory	[A383]
Ms. Deborah Scherrer	Stanford University	[A420]
Dr. Philip Scherrer	Stanford University	[A141, A420]
Mr. Michael Schiess	Museum of Science	[A284]
Dr. Eric Schlegel	Harvard-Smithsonian Center for Astrophysics	[A148]
Dr. F. Peter Schloerb	University of Massachusetts.	[A337]
Dr. Joan Schmelz	University of Memphis	[A244]
Dr. Karel Schryver	Lockheed Martin Solar and Astrophysics Lab	[A457]
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Mr. Arnie Schwartz	NASA Jet Propulsion Laboratory	[A65]
Ms. Maria Schwarz	University of Puerto Rico at Mayagüez	[A186]
Dr. Andrea Schweitzer	Little Thompson Observatory	[A141]
Mr. Bruce Scott	NASA Wallops Flight Facility	[A274]
Ms. Lori Sears	Raytheon STX.	[A385]
Mr. Daniel Sedlacko	NASA Jet Propulsion Laboratory	[A421, A422]
Dr. Richard Sedlock	San Jose State University.	[A205, A206]
Mr. Donato Seguf	University of Puerto Rico at Mayagüez	[A186]
Mr. David Seidel	NASA Jet Propulsion Laboratory	[A282, A383, A421]
Dr. Marc Seigar	Joint Astronomy Centre	[A50]
Mr. Frank Semerano	NASA Jet Propulsion Laboratory	[A385]
Dr. David Senske	NASA Jet Propulsion Laboratory	[A387]
Mr. Roberto Sepulveda	NASA Langley Research Center	[A186]
Mr. Joel Sercel	NASA Jet Propulsion Laboratory	[A385]
Ms. Calina Seybold	NASA Jet Propulsion Laboratory	[A358]
Mr. Thomas Shain	NASA Jet Propulsion Laboratory	[A382, A384]
Ms. Colleen Sharkey	NASA Jet Propulsion Laboratory	[A80, A383, A385, A455]

Mr. Henry Sheen	NASA Jet Propulsion Laboratory	[A421]
Dr. David Sherrod	Hawaiian Volcano Observatory, U.S. Geological Survey	[A17]
Mr. Chris Shinohara	University of Arizona	[A385]
Dr. Stephanie Shipp	Rice University	[A141]
Mr. Richard Shope	NASA Jet Propulsion Laboratory	[A422]
Ms. Charli Shuler	NASA Jet Propulsion Laboratory	[A385]
Ms. Amy Shutkin	University of California, Berkeley	[A318]
Dr. Stein Sigurdsson	Pennsylvania State University	[A347]
Dr. John Sigwarth	University of Iowa	[A274, A325]
Ms. Sarah Silva	Sonoma State University	[A160, A169, A451]
Dr. Larry Simmons	NASA Jet Propulsion Laboratory	[A294]
Mr. Carl Simon	NASA Jet Propulsion Laboratory	[A383]
Dr. Damon Simonelli	NASA Jet Propulsion Laboratory	[A209]
Dr. Mike Sims	NASA Ames Research Center	[A279]
Ms. Margaret Sipple-Srinivasan	NASA Jet Propulsion Laboratory	[A421]
Mr. Darin Skelly	NASA Kennedy Space Center	[A387]
Dr. Patrick Slane	Harvard-Smithsonian Center for Astrophysics	[A9, A137, A248, A347, A391]
Dr. Timothy Slater	University of Arizona	[A141, A200, A206, A439, A473]
Dr. Penny Slocum	The Aerospace Corporation	[A274]
Ms. Karen Smale	NASA Goddard Space Flight Center	[A135, A156]
Ms. Anne Smith	Lockheed Martin Corporation	[A158]
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Ms. DeLee Smith	NASA Goddard Space Flight Center	[A171, A172, A173, A186, A230, A425]
Dr. Denise Smith	Space Telescope Science Institute	[A63, A84, A87, A124, A128, A179, A228, A319, A408]
Mr. Gregory Smith	University of Hawaii at Manoa	[A275]
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Ms. Lesley Smith	University of Colorado, Boulder	[A141]
Ms. Michelle Smith	Cameron University	[A141]
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Dr. Peter Smith	University of Arizona	[A16]
Dr. Randall Smith	Harvard-Smithsonian Center for Astrophysics	[A248]
Dr. Roger Smith	University of Alaska, Fairbanks	[A274]
Dr. Sonya Smith	Howard University	[A66]
Mr. Vern Smith	NASA Goddard Space Flight Center	[A66]
Dr. Sue Smrekar	NASA Jet Propulsion Laboratory	[A384, A385]
Dr. Cary Sneider	Museum of Science	[A141, A185, A198, A470]
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Mr. Tony Solorzano	NASA Jet Propulsion Laboratory	[A383]
Dr. Rachel Somerville	Space Telescope Science Institute	[A407]
Dr. Richard Somerville	University of California, San Diego	[A141]
Mr. Alejandro Soto	NASA Jet Propulsion Laboratory	[A385]
Dr. Nicole Spaun	NASA Ames Research Center	[A337]
Dr. Gordon Spear	Sonoma State University	[A365]
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Mr. Ted Specht	NASA Jet Propulsion Laboratory	[A387]
Ms. Kathleen Spellman	NASA Jet Propulsion Laboratory	[A384]
Dr. Monica Sperandio	Brera Astronomical Observatory	[A169, A451]
Dr. David Spergel	Princeton University	[A9]
Dr. Steve Squyres	Cornell University	[A33, A176, A279, A382, A385, A387, A455]
Dr. Lawrence Sromovsky	University of Wisconsin-Madison	[A272, A474]
Dr. J. Gregory Stacy	Southern University and A&M College	[A52]
Dr. Mike Stage	Massachusetts Institute of Technology	[A249]
Mr. Scott Stallcup	Space Telescope Science Institute	[A228]
Mr. Ronald Stanford	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Peg Stanley	Space Telescope Science Institute	[A128]
Dr. Eileen Stansbery	NASA Johnson Space Center	[A158, A176]
Mr. Ken Starr	NASA Jet Propulsion Laboratory	[A358]
Dr. Simon Steel	Harvard-Smithsonian Center for Astrophysics	[A179]
Dr. Andrew Steele	Carnegie Institution of Washington	[A190]
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Dr. Robert Steinke	NASA Jet Propulsion Laboratory	[A383, A387]
Mr. Ronald Steinkraus	NASA Jet Propulsion Laboratory	[A385]
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Mr. Darrin Stephens	NASA Jet Propulsion Laboratory	[A422]
Dr. S. Alan Stern	Southwest Research Institute	[A298, A404]
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Mr. John Stoke	Space Telescope Science Institute	[A13, A28, A103, A120, A132, A228]
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Dr. Leonard Strachan	Harvard-Smithsonian Center for Astrophysics	[A52, A137, A284]
Mr. James Stratton	Johns Hopkins Applied Physics Laboratory	[A298]
Mr. Scott Stride	NASA Jet Propulsion Laboratory	[A387]
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Dr. Jim Stryder	Western Colorado Museum	[A228]
Mr. Raid Suleiman	Harvard-Smithsonian Center for Astrophysics	[A52]
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Dr. James Sweitzer	DePaul University	[A76, A80, A136, A177, A197, A433, A434, A455]
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Dr. Harvey Tananbaum	Harvard-Smithsonian Center for Astrophysics	[A9, A248, A347]
Dr. Carol Tang	California Academy of Sciences	[A36]
Ms. Meredith Tanguay	Massachusetts Institute of Technology	[A283, A284, A390]
Mr. Jim Taylor	NASA Jet Propulsion Laboratory	[A387]
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Mr. Eric Thomas	East Kentucky Science Center	[A195]
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Dr. Barbara Thompson	NASA Goddard Space Flight Center	[A232, A471]
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Ms. Jenny Tieu	NASA Jet Propulsion Laboratory	[A65, A184, A421, A422]
Dr. Peter Timbie	University of Wisconsin-Madison	[A474]
Mr. Aurelio Tineo	NASA Jet Propulsion Laboratory	[A31]
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Ms. Kay Tobola	Lockheed Martin Corporation	[A44, A158, A176, A192, A282, A383]
Mr. Dave Toll	NASA Goddard Space Flight Center	[A179]
Mr. Barry Tossman	Johns Hopkins Applied Physics Laboratory	[A387]
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Ms. Julie Townsend	NASA Jet Propulsion Laboratory	[A383]
Dr. Leisa Townsley	Pennsylvania State University	[A188]
Dr. Elmar Traebert	Lawrence Livermore National Laboratory	[A46]
Dr. Wesley Traub	Harvard-Smithsonian Center for Astrophysics	[A137, A337]
Dr. Allan Treiman	Lunar and Planetary Institute	[A211]
Dr. Shana Tribiano	CUNY Borough of Manhattan Community College	[A51]
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Dr. Jennifer Trosper	NASA Jet Propulsion Laboratory	[A383, A384, A455]
Mr. Brian Troung	NASA Jet Propulsion Laboratory	[A385]
Ms. Catherine Tsairides	NASA Ames Research Center	[A190]
Dr. Wallace Tucker	Harvard-Smithsonian Center for Astrophysics	[A347]
Mr. Joel Tumbiolo	NASA Kennedy Space Center	[A382]
Dr. Eddie Tunstel	NASA Jet Propulsion Laboratory	[A282, A383, A455]
Dr. Michael Turner	University of Chicago	[A235]
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Ms. Melanie Tysdal	Ball Aerospace Technologies Corporation	[A358]
Dr. Neil Tyson	American Museum of Natural History	[A51, A347]
Ms. Joan Underwood	Lockheed Martin Space Systems	[A385]
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Ms. Marijke Unger	University of Colorado, Boulder	[A141]
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Dr. Jeff Valenti	Space Telescope Science Institute	[A407]
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Dr. Robin Vaughan	Johns Hopkins University	[A66]
Mr. Jorge Vazquez	NASA Jet Propulsion Laboratory	[A179]
Dr. Lisette Velazquez-Rivera	University of Puerto Rico at Rio Piedras	[A172]
Mr. Steve Vernon	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Lisa Vidonic	Lockheed Martin Corporation	[A158]
Dr. Faith Vilas	NASA Johnson Space Center	[A242]
Mr. Ray Villard	Space Telescope Science Institute	[A228]
Ms. Michelle Viotti	NASA Jet Propulsion Laboratory	[A31, A176, A383, A385, A421, A422, A455]
Mr. Greg Vogt	NASA Johnson Space Center	[A198]
Dr. Mark Voit	Space Telescope Science Institute	[A83, A84, A87, A88, A128]
Dr. Richard Vondrak	NASA Goddard Space Flight Center	[A141, A236, A274, A449]
Mr. Vince Voong	NASA Jet Propulsion Laboratory	[A422]
Mr. Christopher Voorhees	NASA Jet Propulsion Laboratory	[A455]
Dr. Jan Vrtilek	Harvard University	[A248]
Dr. Saku Vrtilek	Harvard-Smithsonian Center for Astrophysics	[A248]
Dr. Nolan Walborn	Space Telescope Science Institute	[A407]
Dr. Andrew Wald	Science Applications International Corporation	[A66]
Ms. Connie Walker	National Optical Astronomy Observatory	[A198]
Mr. Gregory Walker	University of Alaska, Fairbanks	[A274]
Dr. William Waller	Tufts University	[A6, A137, A141, A185, A297, A410, A432, A439, A470]
Dr. Donald Walter	South Carolina State University	[A48, A51]
Mr. Eric Wang	Universities Space Research Association	[A241, A334, A429]
Dr. David Ward	University of Washington	[A392]
Dr. Bradley Wargelin	Harvard-Smithsonian Center for Astrophysics	[A46, A248]
Ms. Elizabeth Warner	University of Maryland	[A358]
Ms. Adrienne Wasserman	U.S. Geological Survey	[A17]
Mr. Barnaby Wasson	Arizona State University	[A175, A176, A278, A280, A282, A383, A384]
Mr. Corby Waste	NASA Jet Propulsion Laboratory	[A385]
Mr. Darryl Watanabe	NASA Infrared Telescope Facility	[A50]
Mr. Lance Watanabe	Raytheon STX	[A31, A385]
Ms. Susan Watanabe	NASA Jet Propulsion Laboratory	[A385]
Dr. Mike Watkins	NASA Jet Propulsion Laboratory	[A383]
Mr. Keith Watt	Arizona State University	[A176, A278, A280, A281, A282, A383, A384, A386]
Ms. Sally Watt	Arizona State University	[A176, A280]
Ms. Linda Watts	Lockheed Martin Corporation	[A242]
Ms. Megan Watzke	Harvard-Smithsonian Center for Astrophysics	[A347]
Mr. Peter Waydo	NASA Jet Propulsion Laboratory	[A387]
Dr. Keith Wayland	University of Puerto Rico at Rio Piedras	[A203]
Mr. Leonard Wayne	NASA Jet Propulsion Laboratory	[A383]
Dr. Thomas Wdowiak	University of Alabama at Birmingham	[A279]
Dr. Charles Weatherford	Florida A&M University	[A46]
Ms. Donna Weaver	Space Telescope Science Institute	[A228]
Dr. Kim Weaver	NASA Goddard Space Flight Center	[A347]
Mr. Guy Webster	NASA Jet Propulsion Laboratory	[A383, A421, A422]
Dr. Rich Webster	NASA Jet Propulsion Laboratory	[A383]
Dr. John Wefel	Louisiana State University	[A52]
Dr. Ming-Ying Wei	NASA Office of Earth Science	[A141]
Mr. Scott Weidner	Southwest Research Institute	[A298]

Dr. Edward Weiler	NASA Office of Space Science	[A455]
Dr. Brad Weiner	University of Puerto Rico at Rio Piedras	[A203]
Ms. Stacy Weinstein	NASA Jet Propulsion Laboratory	[A383]
Ms. Melissa Weiss	Harvard-Smithsonian Center for Astrophysics	[A347]
Dr. Paul Weissman	NASA Jet Propulsion Laboratory	[A209]
Dr. Catherine Weitz	NASA Office of Space Science	[A176, A387]
Dr. Dennis Wellnitz	University of Maryland	[A358]
Mr. Barry Welsh	University of California, Berkeley	[A250]
Ms. Susan Wentworth	Lockheed Martin Corporation	[A44]
Dr. Ann Werhle	NASA Jet Propulsion Laboratory	[A65]
Dr. Michael Werner	NASA Jet Propulsion Laboratory	[A53]
Ms. Alice Wessen	NASA Jet Propulsion Laboratory	[A421]
Dr. Randii Wessen	NASA Jet Propulsion Laboratory	[A383]
Ms. Alice Wesson	NASA Jet Propulsion Laboratory	[A63, A422]
Mr. Phil West	NASA Johnson Space Center	[A383]
Mr. Thomas West	NASA Jet Propulsion Laboratory	[A421, A422]
Mr. Andrew Westphal	University of California, Berkeley	[A305]
Ms. Aimee Whalen	NASA Jet Propulsion Laboratory	[A176, A384, A421]
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Mr. Charles Whetsel	NASA Jet Propulsion Laboratory	[A385, A387]
Mr. Walter Whitehead	Ball Aerospace Technologies Corporation	[A358]
Mr. Rusty Whitman	Space Telescope Science Institute	[A228]
Ms. Terriann Whittington	NASA Goddard Space Flight Center	[A66]
Ms. Amy Wilkerson	Space Science Institute	[A198]
Dr. Belinda Wilkes	Harvard-Smithsonian Center for Astrophysics	[A248]
Ms. Carolyn Willard	University of California, Berkeley	[A236]
Dr. Cliff Willey	Johns Hopkins Applied Physics Laboratory	[A324]
Mr. Bruce Williams	Johns Hopkins Applied Physics Laboratory	[A298]
Ms. Tracy Williams	NASA Jet Propulsion Laboratory	[A271, A382, A384]
Dr. Krisstina Wilmoth	NASA Ames Research Center	[A128, A190]
Ms. Betsy Wilson	NASA Jet Propulsion Laboratory	[A387]
Mr. Hugh Wilson	Space Telescope Science Institute	[A228]
Mr. Ken Wilson	Science Museum of Virginia	[A195]
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Mr. Tom Wilson	NASA Jet Propulsion Laboratory	[A387]
Dr. Colleen Wilson-Hodges	NASA Marshall Space Flight Center	[A24, A210]
Mr. David Wilt	NASA Glenn Research Center	[A387]
Dr. Michael Wiltberger	Dartmouth College	[A274]
Dr. Robert Wimmer-Schweingruber	Universitat zu Kiel	[A332]
Dr. Thomas Windham	University Corporation for Atmospheric Research	[A141]
Mr. Eric Winter	NASA Goddard Space Flight Center	[A146]
Mr. Linder Winter	Tufts University	[A148]
Mr. Steve Wissler	NASA Jet Propulsion Laboratory	[A358]
Mr. David Woerner	NASA Jet Propulsion Laboratory	[A383, A384]
Dr. Juergen Wolf	NASA Ames Research Center	[A334]
Dr. Michael Wolff	Space Science Institute	[A279]
Ms. Shirley Wolff	NASA Jet Propulsion Laboratory	[A359, A383, A421, A422]
Dr. Edward Wollack	NASA Goddard Space Flight Center	[A332]
Mr. Harry Woo	NASA Jet Propulsion Laboratory	[A282]
Mr. Doak Woodruff	Ball Aerospace Technologies Corporation	[A358]
Dr. Jim Woods	NASA Goddard Space Flight Center	[A277]
Dr. Peter Woods	Universities Space Research Association	[A210]
Mr. James Wooten	Houston Museum of Natural Science	[A44]
Mr. Robert Wright	Johns Hopkins Applied Physics Laboratory	[A295]
Dr. Michael Wyatt	Arizona State University	[A383, A384]
Mr. Peter Xaypraseuth	NASA Jet Propulsion Laboratory	[A271, A382, A383, A387]

Mr. Fengliang Xu	Ohio State University	[A387]
Ms. LuAnn Yeaman	Lockheed Martin Space Systems	[A387]
Mr. Albert Yen	NASA Jet Propulsion Laboratory	[A279]
Mr. Thomas Yensco	NASA Jet Propulsion Laboratory	[A383]
Dr. Donald Yeomans	NASA Jet Propulsion Laboratory	[A358]
Mr. Byron Yetter	NASA Jet Propulsion Laboratory	[A253]
Ms. Donna Young	Tufts University	[A148, A248, A347]
Ms. Linda Young	Yellowstone National Park	[A392]
Ms. Karen Yuen	NASA Jet Propulsion Laboratory	[A421]
Mr. Mike Zawaski	Space Science Institute	[A198]
Dr. Cary Zeitlin	Lawrence Berkeley National Laboratory	[A385]
Dr. Lev Zelenyi	Space Research Institute	[A47]
Mr. John Ziats	NASA Jet Propulsion Laboratory	[A385]
Dr. Michael Zolensky	NASA Johnson Space Center	[A158, A242]
Dr. Maria Zuber	Massachusetts Institute of Technology	[A176]
Dr. Thomas Zurbuchen	University of Michigan	[A274]
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APPENDIX D. OSS E/PO Partners

The NASA Offices of Space Science and Education are indebted to the more than 500 institutions and organizations that partnered with NASA in FY 2003 to carry out the Education and Public Outreach (E/PO) program. The partners listed below, grouped by the type of institution or organization, contributed to leading the E/PO efforts for NASA space science missions or programs and/or by leading or contributing substantially to developing E/PO products or activities in FY 2003. The numbers in brackets refer to the missions or programs in appendix B or the products or activities in appendix A to which the partners contributed.

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Air Victory Museum, Medford, NJ	[A351]
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Calgary Science Centre, Calgary, Canada	[A13]
Calusa Nature Center and Planetarium, Fort Myers, FL	[A351]
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Clark Planetarium, Salt Lake City, UT	[A14, A351, A455]
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Discovery Center of Springfield, Springfield, MO	[A351]
Discovery Museum, Sacramento, CA	[A351]
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Erie Historical Museum and Planetarium, Erie, PA	[A351]
Erie Zoo, Erie, PA	[A351]
Estrella Squadron, Warbird Museum, Paso Robles, CA	[A351]
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Houston Museum of Natural Science, Houston, TX	[A14, A44, A80, A455]
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Bakersfield College, Bakersfield, CA[A13]
Ball State University, Muncie, IN[A13]

California Institute of Technology, Pasadena, CA	[A5, A48, A53, A60, A200, A201, A235, A245, A314, A315, A437, A438, A439, A440, A441, A442, A443, A455, A475, B25]
Carnegie Mellon University, Pittsburgh, PA	[A98]
Catholic University of America, Washington, DC	[A100, A102]
Clemson University, Clemson, SC	[A274]
College of Charleston, Charleston, SC	[A48, A63, A64, A77, A317, B19]
College of Staten Island, Staten Island, NY	[A51]
Columbia University, New York, NY	[A269]
Cornell University, Ithaca, NY	[A168, A255, B50]
Dartmouth College, Hanover, NH	[A274]
DeAnza College, Cupertino, CA	[A13]
DePaul University, Chicago, IL	[A62, A75, A76, A80, A136, A177, A197, A433, A434, A455, B15]
East Tennessee State University, Johnson City, TN	[A2, A41, A244]
Framingham State College, Framingham, MA	[A13]
Francis Marion University, Florence, SC	[A48]
Glendale Community College, Glendale, AZ	[A219]
Harvard University, Cambridge, MA	[A274]
Holyoke Community College, Holyoke, MA	[A51]
Illinois State University, Normal, IL	[A351]
Indiana University, Bloomington, Bloomington, IN	[A43, A222]
Iowa State University, Ames, IA	[A50]
Johns Hopkins University, Baltimore, MD	[A48, A274]
Lambuth University, Jackson, TN	[A13]
Leslie University, Cambridge, MA	[A9]
Los Angeles Valley College, Valley Glen, CA	[A13]
Louisiana State University, Baton Rouge, LA	[A52]
Massachusetts Institute of Technology, Cambridge, MA	[A249, A283, A284, A345, A390, B83]
Montana State University, Bozeman, MT	[A144]
New Jersey Institute of Technology, Newark, NJ	[A269]
Northern Michigan University, Marquette, MI	[A13]
Ohio State University, Columbus, OH	[A50]
Pennsylvania State University, University Park, PA	[A60, A70, A91, A169, A188, A190, A288, A323]
Princeton University, Princeton, NJ	[A58, A143, A329, A464, B79]
Rice University, Houston, TX	[A48]
Rutgers University, Piscataway, NJ	[A148, A269]
Samford University, Birmingham, AL	[A13]
Sonoma State University, Rohnert Park, CA	[A160, A169, A204, A218, A254, A322, A323, A365, A451, B68, B78, B86]
St. Petersburg College, St. Petersburg, FL	[A13]
Stanford University, Stanford, CA	[A157, B69]
Suffolk County Community College, Miller Place, NY	[A13]
Suffolk County Community College, Selden, NY	[A13]
Tarleton State University, Stephenville, TX	[A13]
Texas A&M University, College Station, TX	[A166]

Tufts University, Medford, MA	[A6, A8, A10, A137, A148, A296, A410, A470, B18]
Universidad Complutense, Madrid, Spain	[A13]
University College Cork, Cork, Ireland	[A13]
University of Alabama at Huntsville, Huntsville, AL	[A56]
University of Alaska, Fairbanks, Fairbanks, AK	[A23, A274, A303]
University of Arizona, Tucson, AZ	[A15, A16, A74, A178, A183, A229]
University of California, Davis, Davis, CA	[A147]
University of California, Santa Barbara, Santa Barbara, CA	[A224]
University of California, Santa Cruz, Santa Cruz, CA	[A254]
University of Chicago, Chicago, IL	[A29, A43, A48, A76, A412, A433]
University of Colorado, Boulder, Boulder, CO	[A11, A17, A55, A141, A286, B104]
University of Florida, Gainesville, FL	[A24]
University of Illinois at Urbana-Champaign, Urbana, IL	[A3]
University of Iowa, Iowa City, IA	[A273, A312, A313, A325, A326, A427, A428, A446, A447, A459]
University of Maryland, College Park, MD	[A152, A293, A357, A358, B51]
University of Michigan, Ann Arbor, MI	[A246, A268, A274]
University of New Hampshire, Durham, NH	[A306, A379, A460]
University of North Texas, Benbrook, TX	[A13]
University of North Texas, Denton, TX	[A351]
University of Rhode Island, Narragansett, RI	[A13]
University of South Australia, Manson Lakes, Australia	[A13]
University of Southern Maine, Portland, ME	[A13]
University of Texas at Austin, Austin, TX	[A166, A167]
University of Toledo, Toledo, OH	[A163]
University of Vienna, Wien, Austria	[A50]
University of Virginia, Charlottesville, VA	[A18]
University of Washington, Seattle, WA	[A71, A154, A189, A243, A333, A396, A435, B21]
University of Wisconsin-Eau Claire, Eau Claire, WI	[A331]
University of Wisconsin-Madison, Madison, WI	[A272, A331, A340, A474]
University of Wisconsin-Whitewater, Whitewater, WI	[A340]
University of Wyoming, Laramie, WY	[A20, A426, A465]
Utah State University, Logan, UT	[A216]
Victory Valley College, Victorville, CA	[A351]
Villanova University, Villanova, PA	[A13, A48]
Washington University, St. Louis, MO	[A258]
Western Kentucky University, Bowling Green, KY	[A34, A48, A67, A142, B10]
Wheaton College, Norton, MA	[A13]
Wheeling Jesuit University, Wheeling, WV	[A34, A40, A72, A125, A181, A380, A388, A402, A463, A476, B17]

Historically Black Colleges and Universities

Alabama A&M University, Normal, AL	[A47, A56]
Cheyney University of Pennsylvania, Cheyney, PA	[A476]
Florida A&M University, Tallahassee, FL	[A46]
Hampton University, Hampton, VA	[A55, A303, B71]
Lincoln University, Lincoln University, PA	[A476]

Norfolk State University, Norfolk, VA	[A49, A55]
South Carolina State University, Orangeburg, SC	[A48, A51]
Southern University and A&M College, Baton Rouge, LA	[A52]
Talladega College, Talladega, AL	[A48]
Tennessee State University, Nashville, TN	[A48, A59, A73]
Texas Southern University, Houston, TX	[A44]

Hispanic-Serving Institutions

CUNY Borough of Manhattan Community College, New York, NY	[A51]
CUNY City College of New York, New York, NY	[A51, A58, A455]
CUNY Hostos Community College, Bronx, NY	[A51]
CUNY LaGuardia Community College, Long Island, NY	[A51]
New Mexico Highlands University, Las Vegas, NM	[A54]
New Mexico State University, Las Cruces, Las Cruces, NM	[A267, A302, A405]
Pasadena City College, Pasadena, CA	[A53]
Pima Community College, Tucson, AZ	[A198]
The University of Texas at Brownsville, Brownsville, TX	[A60]
University of Houston-Downtown, Houston, TX	[A44]
University of New Mexico, Albuquerque, NM	[A41, A54, A57, A211]
University of Puerto Rico at Mayagüez, Mayagüez, PR	[A186]

Tribal Colleges and Universities

Diné College, Shiprock, NM	[A54]
Salish Kootenai College, Pablo, MT	[A45]
Southwestern Indian Polytechnic Institute, Albuquerque, NM	[A57]
United Tribes Technical College, Bismarck, ND	[A74]

Minority Predominant Institutions

CUNY Hunter College, New York, NY	[A51]
CUNY Medgar Evers College, Brooklyn, NY	[A48, A51, A58, A80]
CUNY Queensborough Community College, Bayside, NY	[A51]
CUNY York College, Jamaica, NY	[A51, A58]
Orangeburg-Calhoun Technical College, Orangeburg, SC	[A48]
University of California, Berkeley, Berkeley, CA	[A7, A35, A54, A79, A96, A109, A141, A191, A199, A205, A206, A212, A223, A234, A236, A250, A257, A268, A293, A305, A318, A349, A350, A411, A414, A415, A448, B14, B72, B76, B96, B99, B102, B105]
University of California, Los Angeles, Los Angeles, CA	[A130, A292]
University of Guam, Mangilao, GU	[A351]
University of Hawaii at Hilo, Hilo, HI	[A50]
University of Hawaii at Manoa, Honolulu, HI	[A50, A202, A214, A215, A275]
University of Texas at El Paso, El Paso, TX	[A47, A141]

Organizations Promoting Minority Participation in Science

American Indian Science and Engineering Society, Albuquerque, NM	[A75]
Coalition to Diversify Computing, Evanston, IL	[A75]
Colorado Math, Science, and Engineering Achievement, Denver, CO	[A198]
Cooperating Hampton Roads Organizations for Minorities in Engineering, Norfolk, VA	[A55]
Council for African American Researchers in the Mathematical Sciences, Buffalo, NY	[A75]
Institute for African American e-Culture, Boston, MA	[A75]

National Association of Black Geologists and Geophysicists, Houston, TX	[A75]
National Association of Mathematicians, Atlanta, GA	[A75]
National Society of Black Physicists, Arlington, VA	[A72, A75]
National Society of Hispanic Physicists, Nashville, TN	[A75]
S.M.A.R.T., Inc., Washington, DC	[A238, A380]
Society for the Advancement of Chicanos and Native Americans in Science, Santa Cruz, CA	[A75]
University of Washington State GEAR-UP, Seattle, WA	[A243]
World Hope Foundation, Boulder, CO	[A74]

Science Institutions and Organizations

NASA Headquarters Offices

NASA Office of Biological and Physical Research, Washington, DC	[A274]
NASA Office of Earth Science, Washington, DC	[A141, A179, A232, A235, A455]
NASA Office of Education, Washington, DC	[A20, A21, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A64, A72, A91, A142, A158, A167, A179, A185, A192, A216, A221, A342, A347, A402, A449]
NASA Office of Public Affairs, Washington, DC	[A274, A455]
NASA Office of Space Flight, Washington, DC	[A235, A274, A455]

NASA Centers

NASA Ames Research Center, Moffett Field, CA	[A5, A36, A144, A145, A211, A232, A235, A241, A274, A279, A285, A304, A334, A336, A360, A392, A393, A429, A455, A456, A472, A473, B26]
NASA Glenn Research Center, Cleveland, OH	[A72, A232, A235, A455, A476]
NASA Goddard Institute for Space Studies, New York, NY	[A51, A58, A232, A235]

NASA Goddard Space Flight Center, Greenbelt, MD	[A13, A19, A48, A49, A51, A60, A78, A79, A81, A92, A96, A97, A101, A102, A112, A114, A115, A119, A122, A123, A127, A129, A131, A140, A141, A146, A150, A156, A164, A170, A171, A172, A173, A179, A186, A187, A193, A198, A203, A205, A206, A217, A227, A230, A232, A235, A245, A246, A258, A273, A274, A276, A277, A293, A299, A300, A301, A302, A306, A307, A308, A309, A312, A313, A319, A325, A326, A328, A332, A379, A405, A415, A416, A420, A424, A425, A427, A428, A446, A447, A449, A455, A457, A459, A460, A471, B14, B75, B81, B84, B85, B91, B98, B101, B103, B106, B112, B114, B115]
NASA Jet Propulsion Laboratory, Pasadena, CA	[A5, A22, A28, A30, A31, A32, A33, A38, A42, A53, A55, A61, A65, A73, A80, A89, A93, A98, A99, A116, A117, A118, A120, A121, A126, A132, A133, A141, A152, A153, A159, A161, A175, A176, A183, A184, A195, A198, A209, A225, A232, A233, A235, A253, A259, A260, A261, A262, A263, A264, A265, A266, A271, A274, A278, A279, A280, A281, A282, A294, A310, A311, A316, A327, A330, A335, A343, A344, A351, A355, A356, A358, A359, A364, A366, A367, A368, A378, A382, A383, A384, A385, A386, A387, A400, A403, A409, A421, A422, A430, A431, A444, A445, A452, A453, A455, A461, A462, A466, B12, B27, B29, B30, B31, B32, B36, B37, B38, B39, B40, B41, B42, B49, B51, B52, B56, B58, B59, B62, B70, B74, B87, B89, B90, B116]

NASA Johnson Space Center, Houston, TX	[A5, A44, A65, A158, A192, A221, A232, A235, A242, A274, A330, A381, A455, B57]
NASA Kennedy Space Center, Kennedy Space Center, FL	[A232, A235, A455]
NASA Langley Research Center, Hampton, VA	[A55, A181, A232, A235, A274, A374, A455]
NASA Marshall Space Flight Center, Marshall Space Flight Center, AL	[A24, A56, A210, A232, A235]
NASA Wallops Flight Facility, Wallops Island, VA	[A274]

NASA-Affiliated Organizations

Alabama Space Grant, Huntsville, AL	[A64]
Alaska Space Grant Consortium, Fairbanks, AK	[A274]
Arkansas Space Grant, Little Rock, AR	[A64]
District of Columbia Space Grant, Washington, DC	[A238]
Florida Space Grant, Kennedy Space Center, FL	[A64]
Goldstone Deep Space Communications Complex, Fort Irwin, CA	[A232, A235, A265, A266, A367, A368]
Hawaii Space Grant Consortium, Honolulu, HI	[A202, A214, A275]
Kentucky Space Grant Consortium, Bowling Green, KY	[A142]
Lunar and Planetary Institute, Houston, TX	[A5, A41, A211, A256, A361, A381, A469, B16, B61]
Maryland Space Grant Consortium, Baltimore, MD	[A64]
Mississippi Space Grant Consortium, University, MS	[A64, A342]
NASA Aerospace Education Services Program, Port Orchard, WA	[A13]
NASA Astrobiology Institute, Moffett Field, CA	[A36, A37, A68, A69, A70, A71, A90, A91, A106, A178, A189, A190, A208, A220, A226, A232, A235, A239, A285, A286, A287, A288, A289, A290, A291, A292, A392, A393, A394, A395, A396, A397, B34]
NASA Infrared Telescope Facility, Honolulu, HI	[A50, A214]
North Carolina Space Grant, Raleigh, NC	[A64]
Ohio Space Grant Consortium, Cleveland, OH	[A72, A333]
Pacific Regional Planetary Data Center, Honolulu, HI	[A275]
Pennsylvania Space Grant Consortium, University Park, PA	[A91]
Puerto Rico Space Grant, San Juan, PR	[A64]
Rocky Mountain Space Grant Consortium, Salt Lake City, UT	[A216]
South Carolina Space Grant Consortium, Charleston, SC	[A64]
Space Telescope Science Institute, Baltimore, MD	[A2, A3, A5, A11, A12, A13, A14, A25, A26, A27, A35, A72, A82, A83, A84, A85, A86, A87, A88, A101, A102, A103, A104, A105, A107, A108, A109, A113, A124, A128, A134, A165, A166, A167, A168, A227, A228, A232, A235, A267, A268, A269, A274, A339, A370, A371, A372, A407, A408, A455, B1, B11, B22, B23]
Tennessee Space Grant Consortium, Nashville, TN	[A64]
Virginia Space Grant Consortium, Hampton, VA	[A64, A320]

Wyoming Space Grant Consortium, Laramie, WY[A20, A21, A426, A465]

Other Federal Agencies

Air Force Research Laboratory, Hanscom Air Force Base, MA[A274]
 Fermi National Accelerator Laboratory, Batavia, IL[A232, A235, A274]
 Lawrence Berkeley National Laboratory, Berkeley, CA[A232, A235, A274]
 Lawrence Livermore National Laboratory, Livermore, CA[A46, A48, A50, A56, A147,
 A232, A235, A274]
 Los Alamos National Laboratory, Los Alamos, NM[A54, A174, A196, A235,
 A274, B107]
 National Oceanic and Atmospheric Administration, Boulder, CO[A232, A235, A274, A455]
 National Science Foundation, Arlington, VA[A9, A141, A232, A235,
 A274, A436, A455]
 National Severe Storms Laboratory, Norman, OK[A232, A235]
 Naval Research Laboratory, Washington, DC[A274]
 Smithsonian Institution, Washington, DC[A235, A274]
 U.S. Air Force Academy, Colorado Springs, CO[A13]
 U.S. Geological Survey, Flagstaff, AZ[A5, A232]
 U.S. Naval Observatory, Washington, DC[A293, A351, A455]

Professional Science Societies

American Association of Variable Star Observers, Cambridge, MA[A214]
 American Astronomical Society, Washington, DC[A141]
 American Geophysical Union, Washington, DC[A141, A274]
 American Institute of Physics, College Park, MD[A235, A274, A458]
 National Council of Teachers of Mathematics (NCTM), Reston, VA[A293]

Industry

Ball Aerospace Technologies Corporation, Boulder, CO[A11, A455]
 Coronado Technology Group, Tucson, AZ[A198]
 European Space Agency Research and Technology Centre, Noordwijk, Netherlands[A232, A235, A274]
 GATS, Inc., Driggs, ID[A303]
 Lockheed Martin Advanced Technology Center, Palo Alto, CA[A235]
 Lockheed Martin Astronautics, San Diego, CA[A235]
 Lockheed Martin Corporation, Houston, TX[A69, A180, A226, A242]
 Lockheed Martin Solar and Astrophysics Lab, Palo Alto, CA[A123, A232, A235, A274,
 A457]
 Lockheed Martin Space Systems, Littleton, CO[A232, A235, A455]
 Malin Space Science Systems, La Jolla, CA[A5]
 Raytheon Company, Greenbelt, MD[A81, A110, A111, A122,
 A129, A270, A373, A374,
 A375, A401, B100]
 Science Systems and Applications, Inc., Lanham, MD[B54]
 Space Environment Technologies, Los Angeles, CA[A274]
 The Boeing Company, Cape Canaveral Air Station, FL[A455]

Other Nonprofits

Arcetri Astrophysical Observatory, Florence, Italy[A274]
 Aspen Center for Environmental Studies, Aspen, CO[A198]
 Astronomical Society of the Pacific, San Francisco, CA[A62, A97, A119, A131,
 A144, A145, A241, A304,
 A334, A338, A360, A429,
 A433, A452, A473]
 Carnegie Institution of Washington, Washington, DC[A90, A106, A232, A235,
 A274, A395]
 Carnegie Observatories, Pasadena, CA[A232, A235]

European Southern Observatory, Santiago, Chile	[A232, A235, A274]
European Space Agency, Paris, France	[A5, A235, A274]
Gemini Observatory, Hilo, HI	[A50, A232, A235]
Harvard-Smithsonian Center for Astrophysics, Cambridge, MA	[A4, A9, A13, A46, A52, A94, A95, A135, A138, A139, A148, A151, A198, A204, A231, A232, A235, A248, A274, A337, A341, A345, A346, A347, A348, A352, A353, A354, A391, A410, A413, A417, A418, A432, B13, B28, B65]
Johns Hopkins Applied Physics Laboratory, Laurel, MD	[A19, A48, A51, A149, A232, A235, A252, A274, A295, A298, A321, A324, A404, A420, A454, B33, B48, B55, B97, B110, B111]
Joint Astronomy Centre, Hilo, HI	[A50]
Land Between the Lakes Association, Golden Pond, KY	[A13]
Lowell Observatory, Flagstaff, AZ	[A165, A235]
Marine Biological Laboratory, Woods Hole, MA	[A220, A232, A235, A287, A455]
National Academy of Sciences, Washington, DC	[A141]
National Center for Atmospheric Research, Boulder, CO	[A182, A232, A235, A237, A274, A455]
National Optical Astronomy Observatory, Tucson, AZ	[A19, A48, A141, A198, A232, A235]
National Radio Astronomy Observatory, Socorro, NM	[A19, A235]
National Solar Observatory, Sunspot, NM	[A232, A235, A274]
Pisgah Astronomical Research Institute, Rosman, NC	[A48, A247]
Planetary Science Institute, Tucson, AZ	[A48]
SETI Institute, Mountain View, CA	[A5, A62, A67, A107, A144, A145, A194, A207, A232, A235, A239, A241, A334, A360, A429, A473, B24]
Southwest Research Institute, Boulder, CO	[A235]
Southwest Research Institute, San Antonio, TX	[A235]
Space Explorers, Inc., Green Bay, WI	[A232, A235]
Subaru Telescope, Hilo, HI	[A50]
University Corporation for Atmospheric Research, Boulder, CO	[A182, A235, A274, A455]
W.M. Keck Observatory, Kamuela, HI	[A50, A232, A235]
Woods Hole Oceanographic Institute, Woods Hole, MA	[A232, A235, A455]
Yerkes Observatory, Williams Bay, WI	[A62, A360, A419]

Community Organizations

4-H and Youth Development, Austin, TX	[A167]
Andrews Air Force Base, Andrews Air Force Base, MD	[A351]
Barksdale Air Force Base Youth Center, Bossier, LA	[A351]
Boys and Girls Club of East Valley, Gila River Branch, Komatke, AZ	[A351]
Boys and Girls Club of the Eastern Shoshone Tribe, Fort Washakie, WY	[A351]
Boys and Girls Club of Walatowa, Jemez Pueblo, NM	[A351]
Brooks Air Force Base Youth Center, Brooks Air Force Base, TX	[A351]
Camp Lejeune Marine Corp Base, Camp Lejeune, NC	[A351]
Cayce-West Columbia Jaycees, West Columbia, SC	[A351]
Cherokee Youth Center Boys and Girls Club, Cherokee, NC	[A351]
Chicago Astronomical Society, Chicago, IL	[A433]

City of Wichita Department of Parks and Recreation, Wichita, KS	[A13]
Elgin Air Force Base, Elgin Air Force Base, FL	[A351]
Ellsworth Air Force Base, Ellsworth Air Force Base, SD	[A351]
Fairchild Air Force Base, Fairchild Air Force Base, WA	[A351]
Fort Benning Youth Services, Fort Benning, GA	[A351]
Fort Bliss Youth Center, Fort Bliss, TX	[A351]
Fort Campbell Child and Youth Services, Fort Campbell, KY	[A351]
Fort Drum Youth Services, Fort Drum, NY	[A351]
Fort Gordon Youth Center, Fort Gordon, GA	[A351]
Fort Hood Army Base, Fort Hood, TX	[A351]
Fort Jackson Youth Center, Fort Jackson, SC	[A351]
Fort Knox, Fort Knox, KY	[A351]
Fort Lewis, Fort Lewis, WA	[A351]
Fort Meade, Fort Meade, MD	[A351]
Fort Polk, Fort Polk, LA	[A351]
Fort Sill Youth Center, Fort Sill, OK	[A351]
Friends of Minneapolis Public Library, Minneapolis, MN	[A3]
Girl Scouts of the USA, National Headquarters, New York, NY	[A65, A423]
Girl Scouts, Mile Hi Council, Denver, CO	[A65, A198]
Great Lakes Region Civil Air Patrol, Wright-Patterson Air Force Base, OH	[A351]
Holloman Air Force Base Youth Center, Holloman Air Force Base, NM	[A351]
Kirkland Air Force Base, Kirkland Air Force Base, NM	[A351]
Marine Corps Air Station, San Diego, CA	[A351]
Maxwell-Gunter Air Force Base, Montgomery, AL	[A351]
McConnell Air Force Base, McConnell Air Force Base, KS	[A351]
McGuire Air Force Base, McGuire Air Force Base, NJ	[A351]
Mountain Home Air Force Base Youth Center, Mountain Home, ID	[A351]
Naval Station Mayport, Mayport, FL	[A351]
New Jersey Astronomical Association, High Bridge, NJ	[A269]
Patrick Air Force Base Youth Center, Satellite Beach, FL	[A351]
R.P. Lee Youth Center, Peterson Air Force Base, CO	[A351]
Rutgers Cooperative Extension of Somerset County 4-H, Bridgewater, NJ	[A269]
Scott Air Force Base, Scott Air Force Base, IL	[A351]
Shaw Youth Center, Shaw Air Force Base, SC	[A351]
Subase Youth Center, Groton, CT	[A351]
Tinker Air Force Base Youth Services, Tinker Air Force Base, OK	[A351]
U.S. Army Garrison, Selfridge, Sang, MI	[A351]

Libraries

Billings Public Library, Billings, MT	[A351]
Carbondale Public Library, Carbondale, IL	[A351]
Charleston Community Library, Charleston, SC	[A351]
Coeur d'Alene Public Library, Coeur d'Alene, ID	[A351]
Community Library of Lower Brule, Lower Brule, SD	[A351]
Crook County Library, Sundance, WY	[A351]
Daniel Boone Regional Library, Columbia, MO	[A351]
Dodge City Public Library, Dodge City, KS	[A351]
Dover Public Library, Dover, DE	[A351]
Eugene Field Accelerated School, Mexico, MO	[A351]
Ewa Beach Public Library, Ewa Beach, HI	[A351]
Farmington Public Library, Farmington, NM	[A351]
Fort Smith Public Library, Fort Smith, AR	[A351]
Gadsden Public Library, Gadsden, AL	[A351]
Johnson County Library, Buffalo, WY	[A351]
Kent District Library, Wyoming, MI	[A351]
Louisiana Library Association, Baton Rouge, LA	[A361]

Meridian Public Library, Meridian, MS	[A351]
Mesa County Public Library, Grand Junction, CO	[A351]
Morgantown Public Library, Morgantown, WV	[A351]
Norfolk Public Library, Norfolk, NE	[A351]
Northside Branch Library, Chillicothe, OH	[A351]
Ouachita Public Library, Monroe, LA	[A351]
Parkersburg Public Library, Parkersburg, WV	[A351]
Peter White Public Library, Marquette, MI	[A351]
Platte County Public Library, Wheatland, WY	[A351]
Provo Library, Provo, UT	[A351]
Putnam County Library System, Cookeville, TN	[A351]
Rawlins Municipal Library, Pierre, SD	[A351]
Riverside Public Library, Riverside, CA	[A351]
Sheridan County Fulmar Public Library, Sheridan, WY	[A21, A351]
Texas Library Association, Austin, TX	[A361]
To'Hajiilee Community School Library, Canoncito, NM	[A351]
Tulsa Central Public Library, Tulsa, OK	[A351]
Tuzzy Consortium Library, Barrow, AK	[A351]
Washington County Free Library, Hagerstown, MD	[A351]
Wilmington Public Library, Wilmington, DE	[A351]

Mass Media

Public Radio/TV Station(s)

KIMT-TV, Channel 3, Mason City, IA	[A370]
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APPENDIX E. Conferences

The conferences at which the NASA Space Science Education and Public Outreach (E/PO) Program had a substantial presence in FY 2003 are listed below. The numbers in brackets refer to the activities in appendix A that were carried out at the conferences.

National Education and Outreach

4-H National Agent Conference, Norfolk, VA, October 2002	[A330, A383]
4-H National Conference: Galaxy II, Salt Lake City, UT, September 2003	[A330]
American Association of Physics Teachers, Austin, TX, January 2003	[A105, A148, A157, A169, A208]
American Association of Physics Teachers, Madison, WI, August 2003	[A148, A183, A206, A212]
American Educational Research Association Annual Meeting, Chicago, IL, April 2003	[A161]
American Indian Science and Engineering Society, Oklahoma City, OK, November 2002.	[A79, A319]
Association for the Education of Teachers of Science, St. Louis, MO, January 2003	[A205]
Association of Science and Technology Centers Conference, Charlotte, NC, October 2002.	[A198, A355, A418, A470]
Bowditch Institute Conference, Salem, MA, November 2002.	[A470]
Conference of the National Society of Black Physicists and Black Physics Students, Atlanta, GA, February 2003	[A72]
Girl Scouts of the USA Convention, Long Beach, CA, October 2002.	[A65, A383]
Hands-On Universe Teacher Resource Agent Conference, Williams Bay, WI, June 2003	[A76, A360]
International Technology Education Association Annual Conference, Nashville, TN, March 2003	[A124, A153, A319, A398]
National Association of Biology Teachers Annual Convention, Cincinnati, OH, October 2002	[A208]
National Congress on Aviation and Space Education, Cincinnati, OH, April 2003	[A169]
National Council of Teachers of Mathematics National Conference, San Antonio, TX, April 2003	[A184, A225, A228, A399]
National Federation of the Blind Convention, Louisville, KY, June 2003	[A76]
National Math Conference, San Antonio, TX, April 2003	[A153, A160, A161, A319]
National Organization of Black Chemists and Chemical Engineers Annual Conference, Indianapolis, IN, April 2003.	[A145, A159, A217, A228, A408]
National School Age Care Alliance Annual Conference, Salt Lake City, UT, February 2003.	[A400]
National Science Teachers Association National Conference, Philadelphia, PA, March 2003.	[A55, A105, A124, A143, A144, A148, A152, A153, A157, A158, A159, A160, A161, A165, A169, A176, A184, A190, A191, A192, A194, A195, A201, A204, A208, A217, A223, A228, A319, A364, A365, A417, A451, A475]
Society for Information Technology and Teacher Education, Albuquerque, NM, March 2003	[A425]

- Society for Mexican-American Engineers and Scientists,
 Anaheim, CA, October 2002 [A184]
 Space Science XIX: Space Art and Science,
 Medford, MA, June 2003 [A160, A204]

Regional Education and Outreach

- American Association of Physics Teachers - Chicago Section Spring Meeting,
 Chicago, IL, March 2003 [A76]
 American Association of Physics Teachers - Florida Section Spring Meeting,
 St. Petersburg, FL, April 2003 [A169]
 American Association of Physics Teachers - North Carolina Section Meeting,
 Asheville, NC, November 2002 [A148]
 American Association of Physics Teachers - Northeast Section Meeting,
 Williamstown, MA, April 2003 [A160]
 American Association of Physics Teachers - Northern California-Nevada Section Spring Meeting,
 Rohnert Park, CA, April 2003 [A160, A169]
 American Society for Microbiology Teacher Science Day,
 College Park, MD, May 2003 [A208]
 Arizona Association of Physics Teachers,
 Tucson, AZ, April 2003 [A148]
 Arizona Science Teachers Association,
 Mesa, AZ, October 2002 [A148, A176]
 Astrofest, Manteno, IL,
 September 2003 [A144, A338, A365, A433]
 California Science Teachers Association Conference,
 San Francisco, CA, October 2002 [A144, A161, A184, A191, A194,
 A206, A416]
 Classroom Connect Conference,
 Baltimore, MD, October 2002 [A105]
 Classroom Connect Conference,
 Long Beach, CA, December 2002 [A105]
 Colorado Association of Community Educators Fall Conference,
 Denver, CO, October 2002 [A364]
 Colorado Science Convention,
 Denver, CO, November 2002 [A159, A364]
 Conference for the Advancement of Science Teaching,
 El Paso, TX, November 2003 [A158]
 Earth Math, Windowrock,
 AZ, March 2003 [A54]
 Expanding Your Horizons in Math and Science,
 Pittsburgh, PA, March 2003 [A248]
 Frontiers in Astrophysics,
 Norfolk, VA, June 2003 [A160]
 Georgia Council of Teachers of Mathematics Conference,
 Eatonton, GA, October 2002 [A153, A184, A225]
 Girls Inc. Regional Conference,
 Phoenix, AZ, October 2002 [A65]
 Great Lakes Planetarium Association Annual Conference,
 Fox Valley, WI, October 2002 [A434]
 Hands-On Universe Workshop,
 Stephenville, TX, August 2003 [A360]
 Harvard Foundation Science Conference: Advancing Minorities and Women in Science, Engineering, and Math,
 Cambridge, MA, March 2003 [A248]
 Hoosier Association of Science Teachers Convention,
 Indianapolis, IN, February 2003 [A177, A222]

Illinois State Teachers Association Annual Conference, Saint Charles, IL, November 2002	[A145, A177]
International Amateur-Professional Photoelectric Photometry (IAPPP) Western Division Convention, Big Bear Lake, CA, May 2003.	[A347]
Kansas Association of Teachers of Science Kamp 2003, Rock Springs, KS, April 2003	[A159, A364]
LiftOff Summer Institute, Houston, TX, July 2003	[A445]
Maine Science Teachers Association, Lewiston, ME, October 2002	[A148]
Maryland Day, College Park, MD, April 2003	[A358]
Maryland Science Teachers Association Conference, Baltimore, MD, October 2002	[A64]
McREL Rural Technology Institute, Rapid City, SD, July 2003	[A159]
Meeting Maine Learning Goals Through Math and Science, Augusta, ME, July 2003	[A160]
Middle Atlantic Planetarium Society Conference, Lanham, MD, May 2003.	[A28, A416]
National Science Teacher's Association Regional Conference, Albuquerque, NM, December 2002	[A144, A148, A157, A158, A198, A208]
National Science Teachers Association Regional Conference, Louisville, KY, October 2002	[A148, A169, A195]
National Science Teachers Association Regional Conference, Portland, OR, November 2002.	[A144, A146, A148, A154, A157, A195]
Natives, Africans, Asians, Latinos(as) and Allies of the Association for Experimental Education Conference, Mission, SD, June 2003	[A74]
New Jersey Science Convention, Somerset, NJ, October 2002	[A148]
North Carolina Science Teachers Association, Greensboro, NC, November 2002	[A64]
North Central Region of the Astronomical League, Sturgeon Bay, WI, May 2003	[A145, A451]
Puget Sound Science Supervisors Education Leadership Conference, Blaine, WA, October 2003.	[A435]
Rhode Island Science Teachers Conference, Providence, RI, September 2003	[A185]
Riverside Telescope Maker's Convention, Lake Williams Big Bear City, CA, May 2003.	[A347]
San Diego Science Educators Association Conference, San Diego, CA, March 2003	[A157]
Science Teachers Association of New York, Ellenville, NY, November 2002	[A146, A416]
SEPA -Southeast Planetarium Association, Baton Rouge, LA, June 2003	[A28]
South Carolina Regional Instruction Fair, Aiken, SC, January 2003	[A48]
South Carolina Science Council, Myrtle Beach, SC, November 2002.	[A48]
Spring Meeting of the Council of Science and Math Educators of San Mateo County, Redwood City, CA, February 2003	[A144]
Tennessee Science Teachers Association Annual Convention, Franklin, TN, November 2002.	[A64]

- Texas Council of Teachers of Mathematics Annual Conference,
Houston, TX, July 2003 [A225]
- Thinkers, Learners and Computers,
Orono, ME, August 2003 [A148]
- Tucson Area Physics Teachers Conference,
Tucson, AZ, February 2003. [A148]
- Wisconsin Society of Science Teachers Convention,
Wisconsin Dells, WI, March 2003 [A145, A195, A474]
- Wyoming School Improvement Conference,
Casper, WY, March 2003. [A435]
- Wyoming School Improvement Conference,
Casper, WY, September 2003 [A435]
- Young African American Women's Conference,
Pasadena, CA, November 2002 [A65]

Science

- 50 Years of the Macedonian Society of Physicists,
Skopje, Macedonia, October 2002 [A347]
- American Association for the Advancement of Science,
Denver, CO, February 2003 [A425]
- American Association for the Advancement of Science,
San Francisco, CA, June 2003 [A416]
- American Astronomical Society Guidance and Control Conference,
Breckenridge, CO, February 2003. [A358]
- American Astronomical Society Meeting,
Nashville, TN, May 2003. [A169, A403, A451, A472, A475]
- American Astronomical Society Meeting,
Seattle, WA, January 2003 [A141, A174, A333, A365, A403,
A470, A472, A473, A475]
- American Astronomical Society Solar Physics Division,
Laurel, MD, June 2003. [A141, A416]
- American Astronomical Society, Division of Planetary Science,
Birmingham, AL, October 2002 [A141, A404, A416]
- American Astronomical Society, Division of Planetary Science,
Monterey, CA, September 2003 [A51, A67, A184, A207, A358, A403,
A416, A466, A468, A472, A473, A475]
- American Geophysical Union Fall Meeting,
San Francisco, CA, December 2002 [A56, A141, A416]
- American Physical Society Annual Meeting,
Philadelphia, PA, April 2003 [A365, A451]
- Astronomical League Convention,
Nashville, TN, July 2003. [A347, A373, A410, A416]
- Gamma Ray Burst Conference,
Santa Fe, NM, September 2003 [A365, A451]
- Geological Society of America Conference,
Denver, CO, October 2002 [A158, A364]
- International Astronomical Union General Assembly,
Sydney, Australia, July 2003. [A358]
- International Conference on Mars,
Pasadena, CA, July 2003 [A174]
- Lunar and Planetary Science Conference,
League City, TX, March 2003 [A158, A174]
- NASA Astrobiology Institute General Meeting,
Tempe, AZ, February 2003 [A55, A208, A473]
- NASA's Academy for Sharing Knowledge,
Houston, TX, February 2003 [A445]

National Society of Black Physicists and National Conference of Black Physics Students, Washington, DC, February 2003	[A56]
Universities Space Research Association Conference, Washington, DC, April 2003.	[A47]
World Space Congress, Cocoa Beach, FL, April 2003	[A347]
World Space Congress, Houston, TX, October 2002.	[A44, A47, A141, A158, A192, A359, A422, A425]
XXI Texas Symposium on Relativistic Astrophysics, Florence, Italy, December 2002	[A52]

APPENDIX F. Awards

The following pages list the Awards and other forms of public recognition received by the Office of Space Science (OSS) Education and Public Outreach (E/PO) program in FY 2003. Each listing contains the following information:

Organization:

Organization making or sponsoring the award.

Award:

Name of the award.

Mission/Program:

OSS mission or program receiving the award.

Activity/Person:

OSS E/PO product or activity, or OSS-affiliated individual receiving the award.

Sponsor	
Organization	Award
American Association of Museums	MUSE Award, Bronze
Discover Magazine	Discover Magazine Web Pick
Education Index	Education Index Top Site
Education World	A+ Award
Education World	A+ Award
Education World	Education World Top Site
Education World	Education World Top Site
Education World	Education World Top Site
EducationWorld	A+ Award
Eisenhower National Clearinghouse for Mathematics and Science Education	
Emmy Awards	Pacific Southwest Regional Emmy
eSchool News	eSchool News Site of the Week
GoldenWebAward.com	Golden Web Award
GoldenWebAward.com	Golden Web Award
Good Housekeeping Magazine	Good Housekeeping Site of the Day
Google Web Directory	Top Ranked Site on Extrasolar Planets
Griffith Observatory	The Griffith Observatory Star Awards
Internet Scout Project	Internet Scout Resource
Kids Online	Kids Online Top Site
Kids Online	Kids Online Top Site
NASA	Outstanding Leadership Medal
NASA	Public Service - Group Achievement Award
National Academy Press	Site of the Month
National Science Teachers Association	SciLinks Selection
Omni Intermedia	Omni Bronze Award
PC.com magazine	PC.com Click of the Month
Physical Science Information Gateway	PSIgate
Planet Science Newsletter	Web Site of the Week
Schoolzone	Schoolzone Five Star Rating
TeacherNet	TeacherNet Site of the Week
Telly Awards	The Telly Award
The Communicator Awards	The Communicator Award of Distinction
The Communicator Awards	The Communicator Award of Excellence
USA Today	USA Today Hot Site
Yahoo	Yahoo Web Pick

Recipient	
Mission/Program	Activity/Person
Hubble	ViewSpace
Spitzer Space Telescope	Infrared Zoo Web Site
Spitzer Space Telescope	Infrared Zoo Web Site
Hubble	Amazing Space
Navigator	PlanetQuest
Spitzer Space Telescope	Infrared Zoo Web Site
Spitzer Space Telescope	Herschel Experiment
Spitzer Space Telescope	Seeing Our World in a Different Light
NASA Astrobiology Institute (NAI)	Astroventure
Digital Dozen	Hubble Astroventure
NASA Connect	Having a Solar Blast
Navigator	PlanetQuest
NASA Astrobiology Institute (NAI)	Astroventure
Spitzer Space Telescope	SIRTF Flash Animation
Navigator	PlanetQuest
Navigator	PlanetQuest
Hubble	HST New Views of the Universe
Navigator	PlanetQuest "Life Signs" Activity
Spitzer Space Telescope	Infrared Yellowstone Web Site
Spitzer Space Telescope	Infrared Zoo Web Site
Space Science E/PO Program	Jeffrey Rosendhal
Genesis	Mid-continent Research for Education and Learning
Spitzer Space Telescope	Infrared Zoo Web Site
Hubble	Astroventure
Spitzer Space Telescope	An Infrared Search for Origins
Navigator	PlanetQuest
Chandra	Chandra Public Web Site
Hubble	HubbleSite
Spitzer Space Telescope	Infrared Zoo Web Site
Spitzer Space Telescope	Infrared Zoo Web Site
Spitzer Space Telescope	Ask an Astronomer Video
Discovery Program	Unlocking the Mysteries: NASA's Discovery Program Video
Discovery Program	Unlocking the Mysteries: NASA's Discovery Program Video
Spitzer Space Telescope	Infrared Zoo Web Site
Spitzer Space Telescope	Infrared Zoo Web Site

APPENDIX G. NASA Education Leads

The Office of Space Science (OSS) Education and Public Outreach (E/PO) program products and activities described in this report are only one part of a broad, coordinated NASA Education Program that is led by the NASA Office of Education and spans all of the NASA Strategic Enterprises and Field Centers. The persons responsible for conducting education programs at each of these locations are listed below.

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NASA Headquarters
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202-358-0103
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William.e.Anderson@nasa.gov
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Office of Space Flight

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Office of Space Science

Dr. Philip J. Sakimoto (Acting)

Education and Public Outreach Director

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202-358-2470

Philip.J.Sakimoto@nasa.gov

http://spacescience.nasa.gov/education

NASA CENTERS**NASA Ames Research Center (ARC)**

Mr. Donald James

Director of Education

NASA Ames Research Center

650-604-4967

http://www.arc.nasa.gov/kids.html

NASA Dryden Flight Research Center (DFRC)

Ms. Susan Miller

Chief, Office of Academic Investments

NASA Dryden Flight Research Center

Mail Stop 2004

661-276-7428

http://www.dfrc.nasa.gov/Education

NASA Glenn Research Center (GRC)

Mr. John Hairston, Jr.

Director of Education

NASA Glenn Research Center

External Programs Directorate

216-433-8686

http://www.grc.nasa.gov/Doc/educatn.htm

NASA Goddard Space Flight Center (GSFC)

Dr. Robert Gabrys

Director of Education

NASA Goddard Space Flight Center

301-286-7205

http://education.gsfc.nasa.gov

NASA Jet Propulsion Laboratory (JPL)

Dr. Parvin Kassaie
 Director of Education
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NASA Johnson Space Center (JSC)

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NASA Kennedy Space Center (KSC)

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NASA Langley Research Center (LaRC)

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 NASA Langley Research Center
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<http://edu.larc.nasa.gov>

NASA Marshall Space Flight Center (MSFC)

Mr. Jim Pruitt
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 NASA Marshall Space Flight Center
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<http://education.msfc.nasa.gov>

NASA Stennis Space Center (SSC)

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APPENDIX H. Geographical Index

This index lists by geographical location the institutions and organizations involved in the NASA Space Science Education and Public Outreach (E/PO) Program during FY 2003. It includes institutions and organizations that contributed to leading the E/PO efforts of NASA space science missions or programs, carrying out E/PO activities, developing new E/PO products, serving as host sites for E/PO events or exhibits, and/or to serving as the media outlet for E/PO materials or programs. The numbers in brackets refer to entries in appendix A or B in which the institution's or organization's participation is described.

Alabama

Auburn

Auburn University [A148, A162]

Birmingham

Birmingham Zoo [A351]
 McWane Science Center [A279]
 Oak Mountain Middle School [A262]
 Ramsay High School [A279]
 Samford University [A13, A228]
 Spring Valley School [A278]
 University of Alabama at Birmingham [A279]

Brewton

Brewton Middle School [A262, A263]

Enterprise

Dauphin/Enterprise Junior High Schools [A421]
 Enterprise State Junior College [A421]

Gadsden

Gadsden Public Library [A351]

Homewood

Homewood Public Library [A361]

Huntsville

Alabama Space Grant [A64]
 Ed White Middle School [A421]
 Huntsville City Schools [A455]
 Huntsville Housing Authority [A210]
 Huntsville Public Library [A421]
 Monte Sano Elementary School [A421]
 Montessori School of Huntsville [A421]
 National Space Science and Technology Center [A56, A210]
 U.S. Space and Rocket Center [A12, A14, A228, A421]
 University of Alabama at Huntsville [A56]

Marshall Space Flight Center

NASA Marshall Space Flight Center [A9, A24, A56, A210, A232, A235]

Mobile

Baker High School [A262]
 Bel Aire Mall [A421]
 Environmental Studies Center [A421]

Montgomery

Maxwell-Gunter Air Force Base [A351]
 W. A. Gayle Planetarium [A351]

Normal

Alabama A&M University [A47, A56]

Opelika

Opelika Middle School [A261, A262, A263]

Talladega

Talladega College [A48]

Vestavia Hills

Vestavia Hills High School [A278]

Alaska

Anchorage

Alaska Native Heritage Center [A274]
 Alaska Pacific University [A205, A274]
 Alaska Science Center/Education Research Center [A319]
 Anchorage School District [A206]
 Campbell Lake Airstrip—Bartlett High School [A421]
 Imaginarium Science Discovery Center [A274, A351, A421, A449, A455]
 KAKM-TV, Channel 7/Anchorage [A455]
 Town Square [A421]
 Trailside Elementary School [A421]

Barrow

Tuzzy Consortium Library [A351]

Eagle River

Eagle River Nature Center [A421]
 Mirror Lake Middle School [A421]

Fairbanks

Alaska Space Grant Consortium [A274]
 Creamer's Field Waterfowl Refuge [A421]
 International Arctic Research Center [A274]
 Noel Wien Library [A421]
 University of Alaska, Fairbanks [A23, A195, A274, A303]

Fort Wainwright

Fort Wainwright Army Base [A228]

Juneau

KTOO-TV, Channel 1/Juneau [A455]

North Pole

North Pole High School	[A257]
Ticasuk Brown Elementary School	[A228]

Palmer

Alaska State Fair	[A421]
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Arizona**Ahwatukee**

Ahwatukee Community Center	[A421]
Kyrene Monte Vista Elementary School	[A282]

Amado

Fred Lawrence Whipple Observatory	[A383]
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Avondale

Estrella Mountain Community College	[A184, A281]
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Casa Grande

Casa Grande Middle School	[A383, A423]
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Chandler

Aprende Middle School	[A282]
Comp-USA	[A421]

Coolidge

Central Arizona Community College	[A55, A176]
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Flagstaff

DeMiguel Elementary School	[A165, A228]
Lowell Observatory	[A165, A235]
Northern Arizona University	[A74, A165, A206]
U.S. Geological Survey	[A5, A17, A66, A176, A232]

Gilbert

Private Residence	[A421]
San Tan Elementary School	[A282]

Glendale

Desert Valley Elementary School	[A421]
Glendale Community College	[A219]
Glendale Public Library	[A421]
Pioneer Elementary School	[A280]

Humboldt

Humboldt Elementary School	[A421]
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Komatke

Boys and Girls Club of East Valley, Gila River Branch	[A351]
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Mesa

Desert Ridge Junior High School	[A294]
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Mesa Community and Conference Center	[A195]
Montessori Education Center	[A280]

Nogales

Nogales High School	[A383]
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Oracle

Columbia University Biosphere 2 Center	[A183, A276]
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Oro Valley

Oro Valley Library Star Party	[A421]
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Peoria

Challenger Learning Center	[A19, A198, A316, A421]
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Phoenix

Academic Research Lab	[A61]
Arizona Alliance For Math, Science and Technology Education	[A248]
Arizona Science Center	[A383, A421]
Coppercon 23	[A421]
Cosmic Call	[A421]
Desert Foothills Park	[A421]
Gateway School	[A421]
Girl Scouts, Cactus-Pine Council	[A423]
Granite Wash Mountains	[A175]
Home Depot	[A421]
KXAM News Talk Radio, 1310AM/Phoenix	[A421]
Palo Verde Middle School	[A421]
Starlight Park Elementary School	[A421]

Pinon

Pinon Unified School District	[A61, A74, A316]
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Prescott Valley

Coyote Springs Elementary School	[A421]
Lake Valley Elementary School	[A421]

Scottsdale

Cocopah Middle School	[A282]
Desert Vista Elementary School	[A421]
Scottsdale Community College	[A421]

Sun City West

Sun City West Pioneer Lions Club	[A383]
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Tempe

Arizona Educational Television	[A274, A455]
Arizona State University	[A30, A33, A48, A61, A65, A74, A80, A116, A117, A136, A175, A176, A179, A219, A228, A278, A280, A281, A282, A330, A382, A383, A384, A385, A386, A387, A392, A421, A423, A455, A461]
Fees Middle School	[A383]

KAET-TV, Channel 8/Phoenix	[A274, A455]
KFYI News Talk Radio, 550 AM/Tempe	[A421]
Shalimar Country Club	[A383]

Tsaile

DinÉ College	[A74, A383]
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Tucson

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Arizona Daily Wildcat	[A421]
Coronado Technology Group	[A198]
Dr. Sky Radio Show	[A421]
Flandrau Science Center	[A5, A15, A455]
KTKT Radio, 990 AM/Tucson	[A374]
KUAS-TV, Channel 27/Tucson	[A274, A455]
KUAT-TV, Channel 6/Tucson	[A274, A421, A455]
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Pima Community College	[A198]
Planetary Science Institute	[A48]
Pompea & Associates	[A141, A232, A236]
Sahuaro Girl Scout Council	[A339]
Tucson Amateur Astronomy Association	[A452]
Tucson Citizen	[A421]
University of Arizona	[A15, A16, A74, A141, A174, A178, A183, A200, A206, A229, A242, A339, A353, A385, A387, A410, A421, A439, A466, A473]
Valencia Middle School	[A228]

Union Hills

Union Hills Country Club	[A383]
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Arkansas

Arkadelphia

Henderson State University	[A421]
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Batesville

Lyon College	[A421]
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Conway

KAFT-TV, Channel 13/Fayetteville	[A274, A455]
KEMV-TV, Channel 6/Mountain View	[A274, A455]
KETG-TV, Channel 9/Arkadelphia	[A455]
KETJ-TV, Channel 19/Jonesville	[A274, A455]
KETS-TV, Channel 2/Little Rock	[A274, A455]

Fayetteville

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Fort Smith

Chaffin Junior High School	[A262]
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Little Rock

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Pine Bluff

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Russellville

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Searcy

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California

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Eliot Middle School	[A449]

Anaheim

Anaheim Convention Center	[A383]
Canyon High School	[A278]
Disneyland	[A32]
Downtown Community Center	[A421]
Glenview Elementary School	[A343]
Juarez Elementary School	[A421]
Lincoln Elementary School	[A421]
Low Elementary School	[A421]
Palm Lane Elementary School	[A421]
Roosevelt Elementary School	[A421]
Ross Elementary School	[A421]
The Boeing Company	[A421]
Westmont Elementary School	[A383]

Apple Valley

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Lewis Center for Educational Research	[A161, A162, A261, A262, A264, A366]
Mojave Mesa Elementary School	[A421]

Aptos

Aptos High School	[A254]
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Arcadia

B'Nai Simchah Preschool	[A383]
Baldwin Stocker Elementary School	[A383]

Embassy Suites	[A382]
Foothill Middle School	[A383]
Girl Scouts of Mount Wilson Council	[A65]
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APPENDIX I. Mission/Program Acronym Index

Listed below are the more than 100 NASA space science missions and programs that contributed to NASA Education and Public Outreach (E/PO) program activities in FY 2003. The missions and programs are listed alphabetically by acronym. Missions and programs without acronyms are inserted alphabetically according to their full name. Numbers in brackets refer to mission/program listings in appendix B.

Acronym	Mission/Program	Reference in Appendices
	2001 Mars Odyssey	B41
2MASS	Two Micron All-Sky Survey	B35
ACCESS	Advanced Cosmic-Ray Composition Experiment for the Space Station	B80
ACE	Advanced Composition Explorer	B98
	Adler Center for Space Science Education	B5
AIM	Aeronomy of Ice in the Mesosphere	B71
	Astro-E2	B84
	Astromaterials Program	B57
	Astronomical Search for Origins (ASO) Forum	B11
	Cassini/Huygens Probe	B37
CGRO	Compton Gamma-Ray Observatory	B66
	Challenger Center for Space Science Education	B6
CHIPS	Cosmic Hot Interstellar Plasma Spectrometer	B72
CINDI	Coupled Ion Neutral Dynamics Investigation	B113
	Cluster II	B108
COBE	Cosmic Background Explorer	B82
	Constellation-X	B67
CONTOUR	Comet Nucleus Tour	B50
CXO	Chandra X-Ray Observatory	B65
	Deep Impact	B51
DePaul B/F	DePaul University Broker/Facilitator	B15
DPSO	Discovery Program Support Office	B49
DS1	Deep Space 1 (New Millennium)	B58
DSMS	Deep Space Mission System	B59
EUVE	Extreme Ultraviolet Explorer	B73
FAST	Fast Auroral Snapshot Explorer	B99
FUSE	Far-Ultraviolet Spectroscopic Explorer	B33
GALEX	Galaxy Evolution Explorer	B74
	Galileo	B38
GEC	Geospace Electrodynamic Connections	B92
	Genesis	B52
	Geotail	B109
GLAST	Gamma-Ray Large Area Space Telescope	B68
GP-B	Gravity Probe B Relativity Mission	B69
HEASARC	High Energy Astrophysics Science Archive Research Center	B81
HETE-2	High Energy Transient Explorer 2	B83
HST	Hubble Space Telescope	B22
IDEAS	Initiative to Develop Education through Astronomy and Space Science	B1
IMAGE	Imager for Magnetopause-to-Aurora Global Exploration	B100
IMP-8	Interplanetary Monitoring Platform	B101
INTEGRAL	International Gamma-Ray Astrophysics Laboratory	B85
IS	Interstellar Probe	B87
	Jet Propulsion Laboratory Solar System Exploration (JPL SSE) Theme Lead	B39
JIMO	Jupiter Icy Moons Orbiter	B60
JWST	James Webb Space Telescope	B23
KECK	Keck Interferometer	B28
	Kepler	B24
LBTI	Large Binocular Telescope Interferometer	B29

LISA	Laser Interferometer Space Antenna	B70
LPI B/F	Lunar and Planetary Institute Broker/Facilitator	B16
LPI	Lunar and Planetary Institute	B61
	Lunar Prospector	B53
LWS	Living with a Star Program Office	B114
Mars E/PO	Mars Public Engagement	B40
	Mars Express	B63
	Mars Pathfinder	B44
MARSSB	Mid-Atlantic Region Space Science Broker/Facilitator†	B17
MC	Magnetospheric Constellation	B93
MER	Mars Exploration Rover Mission	B42
MESSENGER	Mercury Surface, Space Environment, Geochemistry and Ranging	B54
MGS	Mars Global Surveyor	B43
MI Initiative	Minority Institution Initiative	B2
MMS	Magnetospheric Multiscale	B94
MRO	Mars Reconnaissance Orbiter	B45
MSC	Michelson Science Center	B30
MSL	Mars Science Laboratory	B46
NAI	NASA Astrobiology Institute	B34
Navigator	Navigator Program	B27
NEAR	Near-Earth Asteroid Rendezvous	B55
NESSIE B/F	New England Space Science Initiative in Education Broker/Facilitator†	B18
	New Horizons	B48
	OSS Science Center Development	B8
OSS/Outreach	OSS Outreach Activities	B7
P2K	Passport to Knowledge	B9
	Polar	B110
RHESSI	Reuven Ramaty High Energy Solar Spectroscopic Imager	B102
	Rosetta	B64
RXTE	Rossi X-ray Timing Explorer	B75
S2N2 B/F	Space Science Network Northwest Broker/Facilitator†	B21
SAMPEX	Solar Anomalous and Magnetospheric Particle Explorer	B103
SDO	Solar Dynamics Observatory	B115
SERCH B/F	Southeast Regional Clearinghouse Broker/Facilitator	B19
SIM	Space Interferometry Mission	B31
SNOE	Student Nitric Oxide Explorer	B104
SOFIA	Stratospheric Observatory for Infrared Astronomy	B26
SOHO	Solar and Heliospheric Observatory	B112
	Solar System Exploration (SSE) Forum	B12
	Solar-B	B95
SPIDR	Spectroscopy and Photometry of the IGMs Diffuse Radiation	B76
SP	Solar Probe	B88
SRT	Supporting Research and Technology	B3
SSI B/F	Space Science Institute Broker/Facilitator	B20
SST	Spitzer Space Telescope	B25
ST-5	Space Technology-5 (New Millennium)	B116
ST-6	Space Technology-6 (New Millennium)	B62
ST-7	Space Technology-7 (New Millennium)	B36
STARBASE	Students Training for Achievement in Research Based on Analytical Space-Science Experiences	B10
	Stardust	B56
STEREO	Solar-Terrestrial Relations Observatory	B96
STP	Solar-Terrestrial Probes Program Office	B91
	Structure and Evolution of the Universe (SEU) Forum	B13
	Sun-Earth Connection (SEC) Forum	B14
SWAS	Submillimeter Wave Astronomy Satellite	B77
	Swift Gamma Ray Burst Mission	B78

THEMIS	Time History of Events and Macroscale Interactions During Substorms	B105
TIMED	Thermosphere Ionosphere Mesosphere Energetics and Dynamics	B97
TPF	Terrestrial Planet Finder	B32
TRACE	Transition Region and Coronal Explorer	B106
TWINS	Two Wide-Angle Imaging Neutral-Atom Spectrometers	B107
	Ulysses	B89
URC	University Research Centers at Minority Institutions	B4
	Viking	B47
	Voyager	B90
	Wind	B111
WMAP	Wilkinson Microwave Anisotropy Probe	B79
XXM-Newton	X-ray Multi-Mirror Mission	B86
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